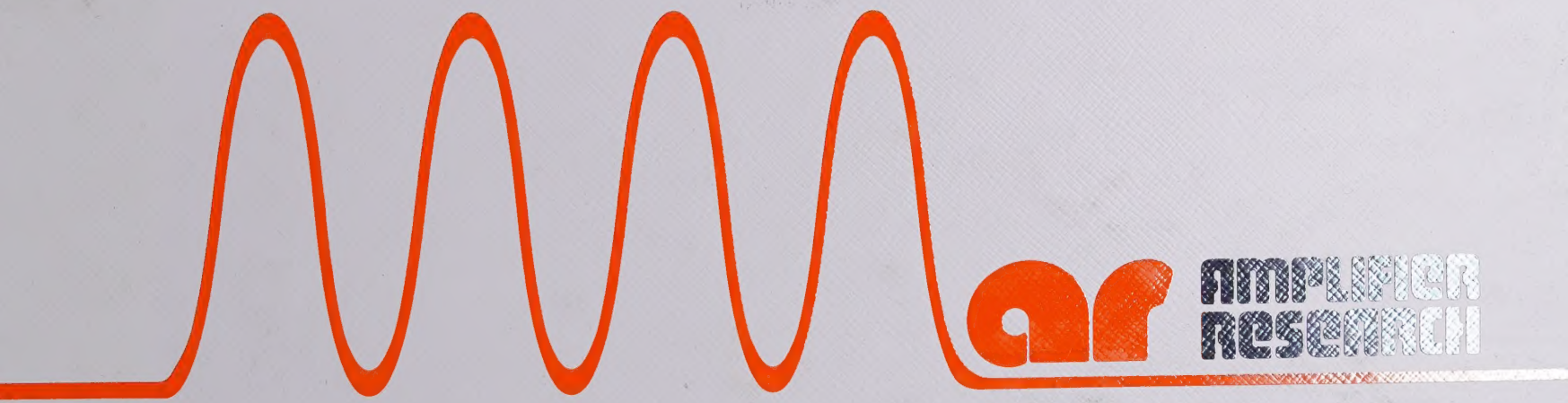

ar
AMPLIFIER
RESEARCH

AMPLIFIER RESEARCH®

160 School House Road, Souderton, PA 18964-9990 USA
TEL 215-723-8181 • FAX 215-723-5688

Dear Amplifier Research Customer,

We thank you for your purchase of Amplifier Research equipment and we hope to keep you as a satisfied customer for years to come. We have included in this Operation's Manual the full color catalog including the product you have purchased and additional pages which highlight our other offerings. Should you require more information on any of these products please ask your Amplifier Research representative or distributor to provide you with your choice of the following catalogs:

- Guide to broadband power amplifiers - An Amplifier Research amplifier line overview
- "A" Series Amplifier Catalog 25 watts to 1100 watts, DC to 250MHz
- "W" Series ultra-broadband RF power amplifiers 1 watt to 1000 watts; DC to 1GHz
- Broadband microwave power amplifiers and accessories 1,5,10, 25, 50, 200, 500 and 1000 watts; 1 to 18GHz
- Accessories for RF Testing
- Antennas for RF Testing
- EMSCAN emissions scanner data pack and demo disk
- TESEO fiber optic data link brochure
- NMR/MRI guide to broadband RF amplifiers
- 5, 10, 20, 50, 100 or 200 V/m recommended system configuration
- IEC 1000-4-3 (IEC 801-3) system configuration
- AR cells pre-compliance test cells
- EM Test line of interference generators to meet IEC/ISO specifications

Again, thank you for the purchase. Your business is appreciated.

Sincerely,

Donald R. Shepherd

Donald R. Shepherd, President
Amplifier Research

Operating and Service Manual

MODEL

25W1000A

PART NUMBER

1008100-501

SERIAL NUMBER

22339

AMPLIFIER RESEARCH
Souderton, PA 18964-9990 USA
TEL 215-723-8181 TWX 510-661-6094 FAX 215-723-5688

AMPLIFIER RESEARCH

160 School House Road, Souderton, PA 18964-9990 USA
TEL 215-723-8181 • FAX 215-723-5688

EC Declaration of Conformity

We; Amplifier Research
160 School House Road
Souderton, Pa. 18964

declare that as of 1997, our product(s);

the Model 25W1000A series amplifiers

to which this declaration relates is in compliance with the requirements of the EEC EMC Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC) in accordance with the relative standards listed below:

EMC:

EN 50082-2 : 1995
Electromagnetic compatibility - Generic immunity standard
Part 2: Industrial environment

EN 55011 : 1991
Electromagnetic emissions requirements for Industrial, Scientific and Medical (ISM) Equipment
Group 1, Class A

Safety:

IEC 1010-1 : 1990 + A1, A2

The CE marking is affixed on the device according to the EC Directives.

Donald R. Shepherd
President

⚠ INSTRUCTIONS FOR SAFE OPERATION

BEFORE APPLYING POWER

Review this manual and become familiar with all safety markings and instructions.

Verify that the equipment line voltage selection is compatible with the main power source.

Protection provided by the equipment may be impaired if used in a manner not specified by Amplifier Research.

INTENDED PURPOSES

This equipment is intended for general laboratory use in a wide variety of industrial and scientific applications. It is designed to be used in the process of generating, controlling and measuring high levels of electromagnetic Radio Frequency (RF) energy. Therefore the output of the amplifier must be connected to an appropriate load such as an antenna or field generating device. It is the responsibility of the user to assure that the device is operated in a location which will control the radiated energy such that it will not cause injury and will not violate regulatory levels of electromagnetic interference.

HAZARDOUS RF VOLTAGES

The RF voltages on the center pin of the RF output connector can be hazardous. The RF output connector should be connected to a load before AC power is applied to the amplifier. Do not come into contact with the center pin of the RF output connector or accessories connected to it. Place the equipment in a non-operating condition before disconnecting or connecting the load to the RF output connector.

SAFETY GROUND

This equipment is provided with a protective earth terminal. The main power source to the equipment must supply an uninterrupted safety ground of sufficient size to the input wiring terminals, power cord, or supplied power cord set. The equipment **MUST NOT BE USED** if this protection is impaired.

PHYSICAL DAMAGE

The RF amplifier should not be operated if there is physical damage, missing hardware or missing panels.

MAINTENANCE CAUTION

Adjustment, maintenance, or repair of the equipment must be performed only by qualified personnel. Hazardous energy may be present while protective covers are removed from the equipment even if disconnected from the power source. Contact may result in personal injury. Replacement fuses are required to be of specific type and current rating.

⚠ INSTRUCTIONS FOR SAFE OPERATION (continued)

SAFETY SYMBOLS

This symbol is marked on the equipment when it is necessary for the user to refer to the manual for important safety information. This symbol is indicated in the Table of Contents to assist in locating pertinent information.

Dangerous voltages are present. Use extreme care.

CAUTION: The caution symbol denotes a potential hazard. Attention must be given to the statement to prevent damage, destruction or harm.

Indicates protective earth terminal.

RANGE OF ENVIRONMENTAL CONDITIONS

This equipment is designed to be safe under the following environmental conditions:

Indoor use

Altitude up to 2000M

Temperature of 5°C to 40°C

Maximum relative humidity 80% for temperatures up to 31°C. Decreasing linearity to 50% at 40°C.

Mains supply voltage fluctuations not to exceed ± 10% of the nominal voltage or minimum and maximum autoranging values.

Pollution degree 2: Normally non-conductive with occasional condensation

While the equipment will not cause hazardous condition over this environmental range, performance may vary.

COOLING AIR

Care should be exercised not to block the cooling air inlets or outlets. Cooling air blockage can result in damage to the RF amplifier or intermittent shut downs.

TABLE OF CONTENTS

SECTION I: GENERAL INFORMATION

1.1 General Description 1-1
1.2 Power Supplies 1-1
1.3 Specifications 1-1

SECTION II: OPERATING INSTRUCTIONS

2.1 ⚠ General 2-1
2.2 ⚠ Amplifier Operations 2-2

SECTION III: THEORY OF OPERATION

3.1 Introduction 3-1
3.2 Amplifier Section 3-1
3.3 Power Supply 3-2

SECTION IV: MAINTENANCE

4.1 General Maintenance 4-1
4.2 ⚠ Disassembly Procedure 4-1
4.3 Troubleshooting 4-2

SECTION V: REPLACEABLE PARTS

5.1 Introduction 5-1
5.2 Ordering Information 5-1
5.3 Non-Listed Parts 5-1
5.4 Circuit Designators 5-1
5.5 Manufacturers' Abbreviation Listing 5-3
5.6 Master List 5-3
5.7 Schematics and Bills of Material 5-3

SECTION VI: RECOMMENDED SPARE PARTS

6.1 Level of Maintenance 6-1

WARRANTIES: LIMITATION OF LIABILITIES

SECTION I

GENERAL INFORMATION

1.1 GENERAL DESCRIPTION

The Model 25W1000A is a self-contained, broadband Amplifier designed for laboratory applications where instantaneous bandwidth, high gain and moderate power output are required. A gain control is located on the front panel which can be used to decrease the amplifier gain by 10dB or more. Solid state technology is used exclusively to offer significant advantages in reliability and cost. A Model 25W1000A used with a frequency swept signal source will provide 25 watts of swept power output from 1 to 1000MHz. Typical applications include antenna and component testing, wattmeter calibration, EMI susceptibility testing, use as a driver for frequency multipliers and high power amplifiers and as an RF source for magnetic resonance imaging studies.

1.2 POWER SUPPLIES

The 25W1000A contains two switching Power Supplies. The input voltage range to these supplies is 90-132 and 180-264 VAC, 50/60Hz universal or selected automatically. The operator does not have to switch or change anything on the 25W1000A when changing the AC input voltage. The AC power consumption is 325 watts nominal. Primary AC circuit fusing is provided. Both power supplies also have an internal AC fuse.

1.3 SPECIFICATIONS

Refer to the "Amplifier Research Data Sheet" on the following page for detailed specifications.

AMPLIFIER RESEARCH
160 School House Road, Souderton, PA 18964-9990 USA
TEL 215-723-8181 • FAX 215-723-5688

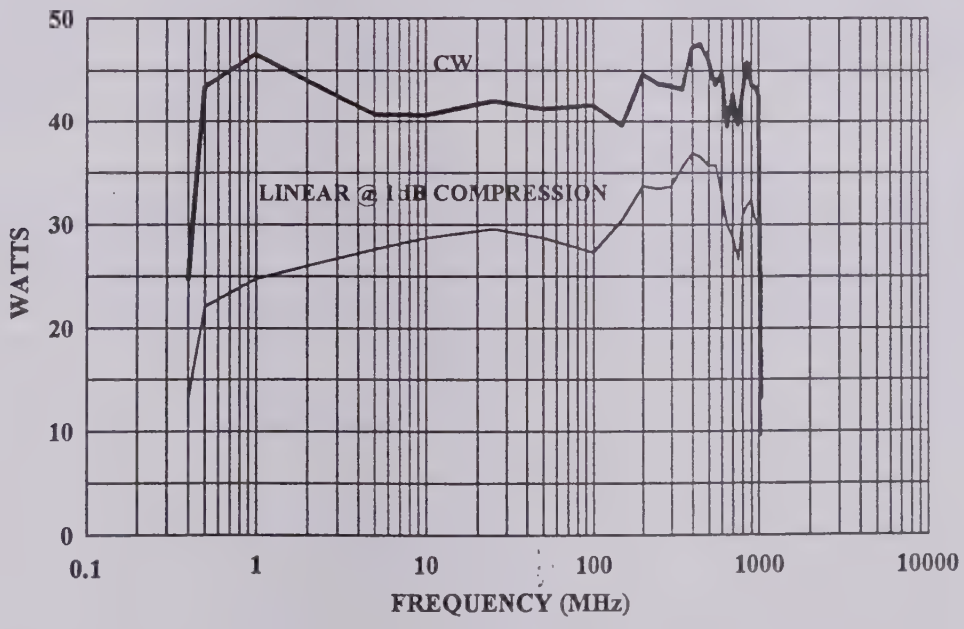
MODEL 25W1000A
25 WATTS CW
1 - 1000 MHz

The Model 25W1000A is a portable, self-contained, air-cooled, broadband, solid state amplifier designed for applications where instantaneous bandwidth and high gain are required. Push-pull circuitry is utilized in all of the high power stages in the interest of lowering distortion and improving stability. The Model 25W1000A, when used with an RF sweep generator, will provide a minimum of 25 watts of swept power.

Special features incorporated into the Model 25W1000A include a front panel gain control, which permits the operator to conveniently set the desired power output level. Annoying amplifier shutdowns due to overdrive are eliminated by protecting the RF input stage with an automatic leveling circuit and limiting diodes. Provisions are included for the remote control of the basic operating functions of the amplifier. Computer control can be accomplished using our CP2001 or CP3000 accessories.

Housed in a stylish, contemporary bench top enclosure, the Model 25W1000A provides readily available RF power for typical applications such as RF susceptibility testing, antenna and component testing, watt meter calibration, and as a driver for frequency multipliers and higher power amplifiers.

25W1000A TYPICAL POWER OUTPUT



REV071196

SPECIFICATIONS
Model 25W1000A

POWER OUTPUT, CW	
Nominal	*40 watts*
Minimum	*25 watts*
Linear @ 1dB compression	*20 watts minimum*
FLATNESS	*±1.5 dB maximum* *±1.0 dB typical*
FREQUENCY RESPONSE	*1-1000 MHz instantaneously*
INPUT FOR RATED OUTPUT	*1.0 milliwatt maximum*
GAIN (at maximum setting)	*44 dB minimum*
GAIN ADJUSTMENT (continuous range)	*10 dB minimum*
INPUT IMPEDANCE	*50 ohms, VSWR 2.0:1 maximum*
OUTPUT IMPEDANCE	*50 ohms, nominal*
*MISMATCH TOLERANCE **	*100% of rated power without foldback. Will operate without damage or oscillation with any magnitude and phase of source and load impedance.*
MODULATION CAPABILITY	*Will faithfully reproduce AM, FM, or pulse modulation appearing on the input signal*
HARMONIC DISTORTION	*Minus 20 dBc maximum at 25 watts*
THIRD ORDER INTERCEPT POINT	*52 dBm typical*
PRIMARY POWER (selected automatically)	*90-132, 180-264 VAC* *50/60 Hz* *325 watts maximum*
CONNECTORS	
RF Input	*Type N female on front panel*
RF Output	*Type N female on front panel*
Remote Control	*25 pin female Subminiature D on rear panel*
COOLING	*Forced air (self contained fans)*
WEIGHT	*16.0 kg (35 lb)*
SIZE (WxHxD)	*50.3 x 15.5 x 30.0 cm* *19.8 x 6.1 x 11.8 in*

** See Application Note #27*

SECTION II

OPERATING INSTRUCTIONS

2.1 GENERAL

Operation of the Model 25W1000A broadband amplifier is simple. The input signal, whether swept or fixed in frequency, is fed into the jack marked ***"INPUT"*** and the amplifier output signal is taken from the jack labeled ***"OUTPUT"***. The unit is turned ON by activating the power switch. In the event of a unit malfunction, protection is provided by fusing located at the rear of the unit. A polarized, three (3) wire AC power cord is also included with the unit to provide cabinet and chassis grounding to the power mains.

⚠ CAUTION:

THE MODEL 25W1000A AMPLIFIER IS NOT CRITICAL IN REGARDS TO SOURCE AND LOAD VSWR AND WILL REMAIN UNCONDITIONALLY STABLE WITH ANY MAGNITUDE AND PHASE OF SOURCE AND LOAD VSWR. IT ALSO HAS BEEN DESIGNED TO WITHSTAND, WITHOUT DAMAGE, RF INPUT POWER UP TO TWENTY (20) TIMES ITS RATED INPUT OF 1mW. HOWEVER, SIGNAL LEVELS HIGHER THAN 20mW OR TRANSIENTS WITH HIGH PEAK VOLTAGES CAN DAMAGE THE AMPLIFIER. ALSO, ACCIDENTAL CONNECTION OF THE 25W1000A OUTPUT TO THE INPUT CAUSES OSCILLATIONS WHICH WILL PERMANENTLY DAMAGE THE INPUT CIRCUITRY.

NOTE:

ALTHOUGH DESIGNED FOR OVERDRIVE AND LOAD TOLERANCE DESCRIBED ABOVE, SUBJECTING THE AMPLIFIER TO THESE CONDITIONS SIMULTANEOUSLY CAN CAUSE FAILURE OF THE OUTPUT TRANSISTOR. REPEATED FAILURES OF THIS NATURE WILL NOT BE COVERED UNDER WARRANTY.

The 25W1000A Amplifier is protected from input overdrive by limiting diodes across the RF input and an automatic level control circuit which will limit the maximum RF level to the first gain stage (U1) of the RF Amplifier to approximately 0dBm. The 25W1000A RF power transistors are protected from over temperature by sensing the heat sink temperature near the RF output transistors. In the event of a cooling fan failure or an air flow blockage the DC voltage will be removed from the RF stages when the heat sink temperature reaches approximately 70°C.

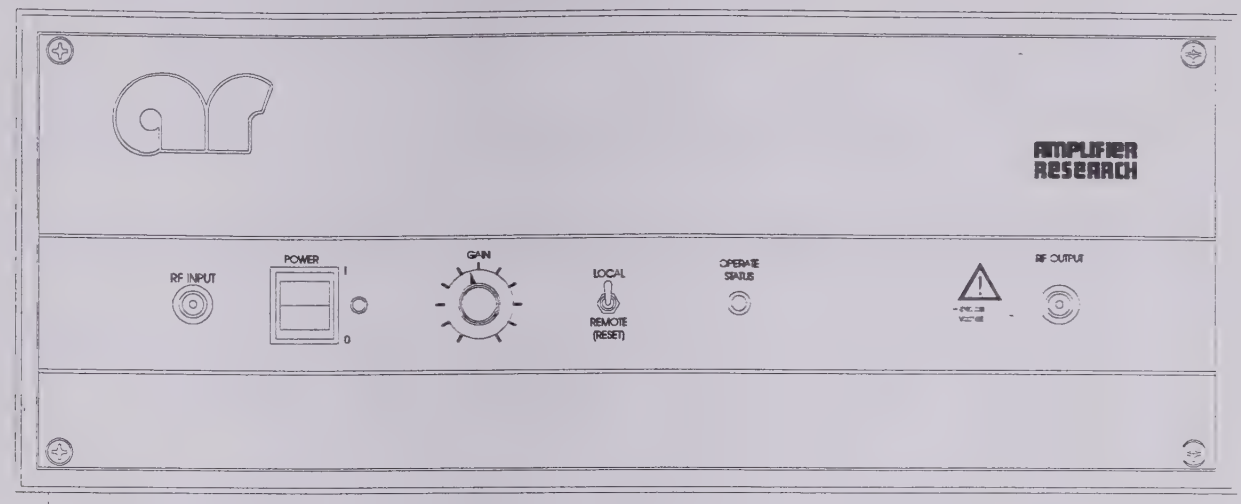
2.1 GENERAL (Continued)

The operate LED, located on the front panel will change in color from Green (normal) to Red (fault) and the temperature fault LED located on the rear panel will light. Normal operation can be resumed after the heat sink temperature drops below 70° C by resetting the 25W1000A remotely or by switching the Local Remote switch from local to remote then back to local.

The RF drive to the RF gain stages will be removed if the 20V supply fails or one of the fuses for the RF stages opens. The input attenuator will go to maximum attenuation during a voltage fault. The voltage fault LED on the rear panel will light and the operate status LED on the front panel will change from Green to Red. The fuse holder with the open fuse will light if the 20V power supply is operating normally. The 25W1000A can resume normal operation when the fuse is replaced (if there are no other problems) by resetting remotely or switching the Local/Remote switch from Local to Remote then back to Local.

2.2 AMPLIFIER OPERATION

Figure 2-1 shows the Model 25W1000A Amplifier in pictorial form.



Turn On Sequence:

1. Connect input signal to "INPUT" connector. The input signal level should be 0dBm maximum.

2. Connect load to "OUTPUT" connector.

3. Activate power switch to ON (1) position. A green indicator light located next to the power switch will light when power is applied.

⚠ CAUTION:

DO NOT CONNECT UNIT TO 240 VAC MEASURED LINE TO LINE. TO DO SO WOULD RESULT IN ONE SIDE OF THE LINE NOT BEING FUSED, CREATING A HAZARDOUS SITUATION. THE 240 VAC FEATURE IS DESIGNED PRIMARILY FOR USE IN COUNTRIES HAVING 240 VAC MEASURED LINE TO NEUTRAL.

SECTION III

THEORY OF OPERATION

3.1 INTRODUCTION

The Model 25W1000A Amplifier consists of an RF Amplifier section located on the heat sink and a power supply/fault control section located on the air shroud on the bottom side of the unit.

The RF Amplifier section consists of four stages of low level gain, a two stage driver, and a final amplifier module. The overall amplifier gain is typically 49dB at the maximum gain setting.

The power supply consists of a 24 volt 1.5 amp supply (PS1), a 20 volt 12 amp supply (PS2), a fault detect/operate board (A2), relays and fusing for the amplifier stage.

3.2 RF AMPLIFIER OPERATION

The RF Low Level stage is schematic number 1008092.

The RF input signal is fed to the first gain stage U1 thru the input attenuator, diodes CR1, CR2 and CR3. Diodes CR4 and CR5 are the RF input limiter diodes. The output of U1 is fed to gain stage U2 and the detector diode CR6 thru a fixed RF attenuator R27, R28 and R40. Diode CR6 detects the RF output level of U1.

The detected signal is fed to U3A which amplifies the detected signal. The output of U3A is fed to U3B which is used as a voltage comparator. The output of the voltage comparator is fed to the variable RF input attenuator thru the manual gain control which is located on the 25W1000A control panel. When the RF input level to U1 reaches approximately 0dBm the current thru the series diodes CR2 and CR3 decreases maintaining the RF level to U1 at approximately 0dBm. This helps to protect the RF stage from damage which could result from RF overdrive on the input. The manual gain control can be used to reduce the gain of the 25W1000A or to lower the RF output level. Transistor Q6 sets the RF input attenuator to maximum attenuation by turning off the output of the voltage comparator (U3B) when Q6 is turned on. This is used when one the fuses to the RF amplifier stages opens.

Integrated circuit U2 further amplifiers the RF signal from U1 and provides RF input to Q4 which amplifies the RF signal and provides RF input to Q3. The output of Q3 is fed to gain equalizer (C10, R22, R23, L9, R24) which helps to reduce the low frequency gain. The output of the gain equalizer is fed to the first driver stage. Transistor Q1 and Q2 are used to maintain the collector current thru RF stages Q4 and Q3 at a constant value.

3.2 RF AMPLIFIER OPERATION

The driver stage, Schematic Number 1008094, consists of push-pull RF stages Q3 and Q4. T4 is a phase splitter which provides signals of the correct phase to the base of Q3. T1 is a matching transformer between the output of Q3 and the input of Q4. Resistor/capacitor network C4, R14 and R15, C29, R25 and R26 help to reduce the excess low frequency gain of the amplifier. Transformer T2 and T3 match the collector of Q4 to 50 ohms. Transistors Q1, Q2, Q5 and Q6 sense the collector current of Q3 and Q4 and help to maintain constant collector currents. Q3 is set to 0.9 amps per side, Q4 is set to 1.5 amps per side. The output of Q4 is fed to the input of the (A3) 30 watt output stage

The 25 watt output stage, Schematic Number 1008103, consists of push-pull RF stages Q2, and Q5. The R12, C91, T6 transformer network serves to reduce excess low frequency gain of the amplifier. Transformer T7 is a two way input splitter which splits the input signal to RF stages Q2 and Q5. T1 and T4 are phase splitters which provide signals of the correct phase to the bases of RF stages Q2 and Q5. Transformer T2 and T3 match the collector of Q2 to 50 ohms, while transformer T5 and T8 match the collector of Q5 to 50 ohms. The outputs of both RF stages Q2 and A5 are then recombined in the T9 two to one step up transformer. I.C., U1A, U1B, U2A and U2B sense and help maintain constant collector currents for the Q2 and Q5 RF transistors. Q1, Q3, Q4 and Q6 provide the base current for RF transistors Q2 and A5. The currents for transistor Q2 and Q5 are all set for 1.5 amps per side.

3.3 POWER SUPPLY OPERATION

The D.C. power supplies, Schematic Number 1007244 consists of two switching regulators, PS1 and PS2. These supplies operate with input voltages of 90 to 132 or 180 to 264 VAC, 50/60Hz. The AC input power is connected to FL1 on the rear panel of the 25W1000A.

Filter FL2 attenuates any switching transients from PS1 or PS2. Switch S2 on the front panel selects either local or remote operation. PS2 is a 24 VDC, 1.5 amp switching power supply. The output from PS2 powers the DC fan B1 , the A2 fault/operate board and supplies power for remote operation. PS1 is a 20 VDC, 12 amp. Switching power supply. The output of PS1 is fused thru fuses F2 thru F3. The output of these fuses supply DC current to all of the RF Amplifier gain stages. The output of PS1 can be turned off with an inhibit to the power supply module disable (+) of the supply. When the inhibit signal is low PS1 is turned off.

3.4 FAULT/OPERATE OPERATION

D.C. power is supplied to the Fault/Operate board Schematic Number 1007229 from the 24 volt regulator to pin 1 of J2. U5 is a 15V DC regulator which supplies a regulated 15V to the Fault/Operate board. Relay K1 is used when the 25W1000A is being reset remotely. Relay K2 supplies power to the remote fault light and also operates the operate status LED on the front panel.

3.4 FAULT/OPERATE OPERATION (Continued)

Thermal faults are sensed as a high on pin 3 of J1 when the heat sink temperature is above 70° C. This condition is held by the latch and hold circuit made of I.C. U1B, U1A and U1D. To clear a thermal fault condition the fault must be removed and a reset (low) signal must be applied to pin 5 of U1B. The output of U1A of pin 3 turns on transistors Q6 which lights the thermal fault LED DS1. The output of U1A pin 3 also provides a 1VDC (HI) signal to the power supply module disable (+) of PS1. Removing the 20VDC output to the RF amplifier stages..

Comparator U3 is used to sense open fuses or low output from PS1. Diodes CR6 thru CR7 are each connected to the output of a DC fuse. An open fuse or low voltage condition is held by latch and hold circuit U2B, U2A and U2D. To clear the latch and hold circuit the fault must be removed and a reset signal (low) must be applied to pin 5 of U2B. Pin 3 of U2A turns on transistors Q4 and Q5 during a fault condition. Q4 turns on the voltage fault LED DS2. Q5 provides a high to the gain inhibit input of the Low Level RF Amplifier causing the RF input attenuator to go to maximum attenuation. This turns off the RF Amplifiers of section A1. Protecting the output RF stages.

Transistor Q3 generates a short reset pulse at amplifier turn on. Transistor Q1 disables the voltage fault detect circuit when the amplifier is not in the operate mode.

SECTION IV

MAINTENANCE

4.1 GENERAL MAINTENANCE INFORMATION

The Model 25W1000A should require very little maintenance since it is a relatively simple instrument. It is built with etched circuit wiring and solid state devices which should ensure long, trouble free life. However, should trouble occur special care must be taken in servicing to avoid damage to the devices or the etched circuit board.

Since the components are soldered in place, substitution of components should not be resorted to unless there is some indication that they are faulty. In addition, take care when troubleshooting, not to short voltages across the amplifier. Small bias changes may ruin the amplifier due to excessive dissipation or transients.

Components in Amplifier Research instruments are conservatively operated to provide maximum instrument reliability. In spite of this, parts within an instrument may fail. Usually, the instrument must be immediately repaired with a minimum of *"down time"*. A systematic approach can greatly simplify and thereby speed up the repair.

However, due to the importance of the amplifier's alignment, it is recommended that when failure is caused by breakdown of any of the components in the signal circuits, the amplifier be returned to the factory for part replacement and amplifier realignment. Shipping instructions are as follows.

Ship PREPAID via United Parcel Service to:

Amplifier Research Corporation
160 School House Road
Souderton, Pa. 18964

4.2 DISASSEMBLY PROCEDURE

⚠ CAUTION:

EXTREME CAUTION SHOULD BE EXERCISED WHEN TROUBLESHOOTING THIS UNIT. PARTICULARLY WHEN MEASURING VOLTAGES IN THE POWER SUPPLY SECTION OF THE UNIT AS HAZARDOUS VOLTAGES DO EXIST IN THE UNIT WHICH COULD CAUSE SERIOUS INJURY TO ANY PERSONNEL PERFORMING THE MEASUREMENTS.

The amplifier can be removed from the housing by removing 4 screws from the front panel and 4 screws from the back panel. The amplifier can then be slid from the housing. The top cover can be removed to gain access to the RF assemblies. The bottom cover can be removed to gain access to the power supplies.

4.3 TROUBLESHOOTING

Troubleshooting the 25W1000A in a logical manner can speed the solution to a problem. The settings of pots, capacitors or other variables should not be disturbed until other problems have been eliminated. Many problems can be solved by comparing the measured DC voltage to those shown on the schematics. Before measuring circuit voltages, first verify that the voltage to the circuits are correct.

25W1000A Troubleshooting Categories

Paragraph 4.4 Lamp for the Power Switch Doesn't Light
Paragraph 4.5 Thermal Fault
Paragraph 4.6 Voltage Fault
Paragraph 4.7 Fault Indications Normal - Low or No RF Power Output

4.4 Green Power for Indicator Doesn't Light

Refer to Schematic Number 1007244

4.4.1 If the cooling fan is running the power for indicator is defective or there is a wiring problem.

4.4.2 If the fan is not running, check to see that the 25W1000A is plugged into a live outlet. Check the line cord, is the line cord plugged into the 25W1000A completely ?

4.4.3 Check the AC fuse located on the rear panel (F1) of the 25W1000A.

4.4.4 Check the output voltage from PS2, it should be 24 VDC

No output, check:

(1) Check the AC input to PS2. The AC input should be equal to the AC Line Voltage. If there isn't any AC input, the power switch could be defective or there could be an open in the wiring or other component.

(2) Check the fuse on the AC input located in PS2, if okay, remove the output connector from PS2, recheck the D.C. output voltage , if voltage is present without load, there may be a short on the output of PS2.

4.5 Thermal Fault

Operate status on the front panel Red and the Fault LED on the rear panel lit. Try to reset the 25W1000A. If the unit doesn't reset:

4.5.1 Check for blockage of the air inlets on the bottom of the unit.

4.5.2 Check for blockage of the air outlet on the rear of the unit.

4.5.3 Is the fan in operation ? This can be tested by checking the air flow from the rear panel.

4.5.4 If the above is okay and the unit is not overheated, check the thermal switches S1 and S2 located on the RF side (top) of the heat sink. Both S1 and S2 should be closed below 70° C.

4.5.5 Check for continuity from P6 pin 3 to GND, if okay check the A2 fault detect board. The fault should reset when J1 pin 3 is grounded.

4.6 Voltage Fault LED on Rear Panel Lit

25W1000A can not be reset:

4.6.1 Check indicating fuses (F2 and F3) on the rear panel, are any lit ?

(1) If any indicating fuse is lit, turn off the 25W1000A and replace the fuse. If the 25W1000A then turns on without a fault, check the 25W1000A for proper operation. There are spare 4 amp fuses to replace F2 and F3, if necessary, in the shipping kit.

(2) If the fuse opens again, check for a short after the fuse, it could be in the wiring or a component.

4.6.2 No indicating fuses lit.

(1) Check the output voltage from PS1 - should be 20 VDC.
No output - Check for an inhibit signal to power supply module disable (+) on PS1. The voltage should be low (0VDC). A HI of 1VDC turns off the output of PS1.

Check for AC input to PS1, it should be equal to the AC line voltage.

4.7 Low RF Power Output or No RF Power Output

All the indicators of the 25W1000A are normal.

(1) Power LED lit.
(2) Operate Status Green

4.7.1 Check the position of the RF gain control on the 25W1000A, turn to maximum gain (CW).

4.7.2 Check the position of the Local/Remote switch, is it in the correct position.

4.7.3 Check the RF input power to the 25W1000A, is it the correct frequency and amplitude?

4.7.4 Check the output connection from the 25W1000A, is it correctly connected to the load ? Is the coax cable in good condition, open or shorted ?

NOTE: The 25W1000A is capable of 45 watts or more power output at many places over its response. Attenuators used to measure the RF power output must be capable of dissipating the RF power, use care so as not to damage the test equipment used.

4.7.5 Check the RF gain of the 25W1000A, the gain should be 44dB minimum with the RF gain control at maximum gain (CW).

4.7.6 Check the RF power output from the 25W1000A. The RF power output should be 25 watts minimum with 0dBm (1mw) RF power input.

4.7.7 If the RF gain or power output is low, check the following D.C. voltages. The RF gain control should be at maximum gain for these readings.

NOTE: The locations of the feed thru capacitors can be found on the RF Assembly Drawing Number 1007243.

Feedthru Cap	Normal Voltage	Remarks
C1	18.0 V min.	Gain Control Max. CW
C2	18.0 V min.	Power in the less than 0dBm
C3	0.5 V max.	Inhibit signal
C4	20 VDC	Low Level Stages
C5	20 VDC	Pre-Driver
C6	20 VDC	Driver Stage
DC IN A2J11	20 VDC	25 watt Output Stage
DC IN A3J10	24 VDC	25 watt Output Stage

4.7.8 If all of the above voltages are normal, do the following gain measurement. The measurement can be made with a CW RF signal or with a swept RF input signal. The RF input power level should be -10dBm or less to check linear gain.

(1) Check the gain of the amplifier from connector A1A1J1, RF input to connector A1A2J2 RF output. The gain should be approximately 40dB at 500MHz. If a sweep RF generator is available the swept response should resemble Figure I.

NOTE: The swept response does vary from unit to unit.

If the gain is near normal go to Paragraph 4.7.9.

(2) If the RF gain is appreciably lower than it should be, remove the covers from A1A1 and A1A2. Inspect the stages for defective solder joints burned or broken part. Compare the voltages of the schematics 1008092 and 1008094.

NOTE: Troubleshooting stages with Active bias.

(a) Measure the DC input voltage.

(b) Measure the DC voltage drop across the low value resistor from VCC to the emitter of the active bias transistor. Is the voltage drop similar to the drop shown on the schematic ? If the voltage drop is correct, the DC parameters of the stage are probably correct.

(c) Measure the base voltage of the active bias transistor, is it similar to that shown on the schematic ?

(d) Measure the collector voltage of the RF transistor, is it similar to that shown on the schematic ?

(e) Measure the base voltage of the RF transistor.

Higher then Normal - With low emitter voltage - indicates an open base emitter junction.

Lower than Normal - Indicates a short to ground or a shorted base emitter junction.

NOTE: To replace the stud mount transistors Q3 or Q4;

(a) Remove the bottom panel.

(b) Remove PS2 from the power supply assembly to get to the access holes.

(c) Nuts for Q3 or Q4 can be removed thru access holes.

4.7.9 Check the gain of the 25 watt output module by:
Refer to Schematic 1008103.

(1) Connect the RF input signal to A1A3J12, the output signal can be taken from the output connector on the front panel. The RF gain should be approximately 8dB at 500MHz. The swept response should be similar to Figure II.

(2) The output module has four active devices, each can be checked to verify its contribution to the power output and for normal bias circuit operation.

(a) Measure the voltage of the collectors of the bias transistors in the module. This voltage can be measured on the tabs of Q1, Q3, Q4 and Q6. The reading should be between 10V and 14VDC.

(b) Remove the bias from one side of Q2 by removing P2, and note the gain reduction. Reinsert P2 and repeat this step for P3, P6 and P7. The gain reduction should be similar for each transistor, investigate if not similar.

SECTION V

REPLACEABLE PARTS

5.1 INTRODUCTION

This section contains information for ordering replacement parts. Information is provided for obtaining parts through Amplifier Research and/or from the manufacturer of the part. Included in this section are the following:

- Ordering Information
- Non-Listed Parts
- Circuit Designators
- Manufacturers' Abbreviation Listing
- Master List
- Schematics and Bills of Material (BOMs)

5.2 ORDERING INFORMATION

To obtain replacement parts, address your order to Amplifier Research, 160 School House Road, Souderton, PA 18964-9990 USA. Please include the instrument's Model Number and Serial Number.

TEL: 215 723-8181
TWX: 510 661-6094
FAX: 215 723-5688

5.3 NON-LISTED PARTS

To obtain a part that is not listed in this section, please include the following information with your order:

a. Instrument Model Number
b. Instrument Serial Number
c. Description of the Part
d. Function and Location of the Part

5.4 CIRCUIT DESIGNATORS

REF = Reference Document

A = Assembly

B = Fan

BT = Battery

C = Capacitor

CB = Circuit Breaker

CR = Diode

DL = Delay Line

DS = Lamp

E = Terminal

F = Fuse

F = Filter

5.4 CIRCUIT DESIGNATORS (continued)

J = Connector, Recept.

K = Relay

L = Inductor

M = Meter

P = Connector, Plug

Q = Transistor, Semiconductor

R = Resistor, Potentiometer

RT = Temperature-Sensing Element

S = Switch

T = Transformer

TB = Terminal Block

TP = Test Point

U = Integrated Circuit

V = Vacuum Tube, Neon Bulb, Photocell, etc.

VR = Zener Diode

W = Wire, Cable

X = Socket

Y = Crystal Unit

5.5 MANUFACTURERS' ABBREVIATION LISTING

This section contains a list of manufacturers' abbreviations. These abbreviations appear under the "Drawing Number" column on the Bills of Material (BOMs). The three letters or symbols before the backward slash represent the name of the manufacturer. The number after the backward slash represents the manufacturer's part number. See **Appendix A** (at the end of this section) for a complete listing of manufacturers' abbreviations.

5.6 MASTER LIST

The Master List provides the user with a quick view of the major assemblies of a unit. The assemblies are displayed in an indented format, with the corresponding schematic shown in the right column.

5.7 SCHEMATICS AND BILLS OF MATERIAL (BOM_S)

The schematics and BOMs are arranged in sequence according to the Master List. The schematic that appears first on the Master List also appears first in the schematic and BOM section. Following each schematic are the appropriate BOMs relating to the schematic. This pattern is repeated throughout this section.

5.7 SCHEMATICS AND BILLS OF MATERIAL (BOM_S) (continued)

The BOMs used in this manual are computer-generated. Each computer part number appears only once on a BOM. along with the total quantity used and all of the applicable circuit designators. The BOMs are designed to organize the parts in alphanumeric order of their circuit designators. Typical manufacturer part numbers can be found in the drawing number column. The manufacturer's abbreviation appears first, separated by a backward slash, which is followed by the part number.

Amplifier Research has assigned computer product numbers to all parts in inventory. The computer product numbers are located on the left side of the BOM in the "Part Number" field. When referencing or ordering parts from Amplifier Research, it is best to use the computer product number. Parts may also be ordered directly from the manufacturer by using the manufacturer's part number, if desired.

AAV ..... AAVID
ABB ..... ABBEON
ACA ..... ANTENNA CORPORATION OF AMERICA
ACO ..... ARCO
ADA ..... ADALET
AND ..... ASTRO DYNE
AEC ..... ARNOLD ENGINEERING COMPANY
AEP ..... APPLIED ENGINEERING PRODUCTS
AER ..... AEROQUIP
AEX ..... AEROVOX
AHC ..... AIRLINE HYDRAULICS CORPORATION
AIN ..... AIN PLASTICS
AIR ..... AIRPAX
AIT ..... AERITALIA
AJO ..... A. J. OSTER FOILS INCORPORATED
ALC ..... ALCO
ALE ..... ALLIED ELECTRONICS
ALI ..... ASTROLAB INCORPORATED
ALP ..... ALPHA
AMA ..... AMATOM
AMC ..... AMPEX CORPORATION
AMH ..... AMPHENOL
AMI ..... AMPLIFONIX INCORPORATED
AMP ..... AMP INCORPORATED
AMR ..... AMREP
AMS ..... AMERICAN STANDARD
AND ..... ANALOG DEVICES
ANZ ..... ANZAC
APG ..... AP-O-GEE INDUSTRUES
APN ..... AMERICAN PRECISION
APO ..... AMPROBE
APP ..... A. P. PRODUCTS INCORPORATED
APR ..... AMPERITE
APX ..... AMPEREX
ARC ..... AMPLIFIER RESEARCH CORPORATION
ARE ..... ARROW ELECTRONICS
ARO ..... AROMAT CORPORATION
ARP ..... APPLE RUBBER PRODUCYS INCORPORATED
ASB ..... ASTRO-BUBBLES
ASC ..... AMERICAN SWITCH CORPORATION
ASD ..... AMERICAN STANDARD
ASP ..... ASSOCIATED SPRING
AST ..... ASTEC
ATC ..... AMERICAN TECHNICAL CERAMICS CORPORATION
ATL ..... ATLEE
AUG ..... AUGAT INTERCONN COMP DIVISION
AVA ..... AVA CORPORATION
AVF ..... ALLENTOWN VALVE & FITTING COMPANY
AVT ..... AVANTEK
AVX ..... AVX CORPORATION
A-B ..... ALLEN BRADLEY
A-C ..... ANDREW CORPORATION
A-M ..... AEC MAGNETICS
A-S ..... ALCOSWITCH

A-T ..... AHAM-TOR
BBI ..... BARON-BLAKSLEE INCORPORATED
BDX ..... BENDIX
BEL ..... BELDEN
BER ..... BERKLEY & COMPANY
BEY ..... BEY ELECTRIC
BFG ..... B.F. GOODRICH
BFI ..... BUCKEYE FORGE INCORPORATED
BKM ..... BECKMAN
BOK ..... BOKER'S INCORPORATED
BOP ..... BOPLA ENCLOSURES
BOR ..... BOURNS
BRD ..... BIRD ELECTRONICS
BRG ..... BERGQUIST
BUD ..... BUD COMPANY
BUS ..... BUSS
B-C ..... BONCO CORPORATION
B-E ..... BRIM ELECTRONICS
B-T ..... BEAU-TECH
B-V ..... BEAU/VERNITRON
CAD ..... CADDOCK
CAM ..... CAMBION
CAN ..... CANNON
CAP ..... CANPACK
CAR ..... CARLING
CAT ..... CATAMOUNT
CCI ..... CRL COMPONENTS INCORPORATED
CDC ..... COMPACT DEVELOPMENT CORPORATION
CDI ..... COAXIAL DYNAMICS INCORPORATED
CEN ..... CENTURY ELECTRONICS
CES ..... COUNTY ELECTRIC SUPPLY COMPANY
CGI ..... COMPONENT GENERAL INCORPORATED
CHE ..... CHERRY
CHR ..... CONNETICUT HARD RUBBER
CIN ..... CINCH
CJS ..... CENTRAL JERSEY SCREW & BOLT
CKS ..... C & K COMPONENTS INCORPORATED
CLA ..... CLAROSTAT
CLC ..... CHICAGO LOCK COMPANY
CMI ..... CERAMIC MAGNETICS INCORPORATED
CMP ..... COMMERCIAL PLASTICS
CMT ..... CONTINENTAL MICROWAVE & TOOL
CNF ..... CINCINNATI FAN
COE ..... COMP ENTERPRISES
COL ..... COLDER PRODUCTS
COM ..... COMPUCON
CON ..... CONCORD ELECTRONICS
COP ..... COMPLETE PACKAGING
COR ..... CORCOM
CPC ..... C.P. CLARE
CPI ..... COMPUTER PRODUCTS INC.
CPL ..... COMPULITE
CPS ..... COLOR PRINT SCREENING
CRC ..... CRC CHEMICALS

CTS ..... CTS OF BERNE INCORPORATED
CUS ..... CUSTOM
C-D ..... CORNELL-DUBILIER
C-E ..... CORNING ELECTRONIC
C-I ..... CRAFTECH INDUSTRIES
C-P ..... CAPLUG COMPANY
C-T ..... CANADIAN THERMOSTATS
CWD ..... CESIWID INCORPORATED
DAL ..... DALE
DAT ..... DATEL INC
DEL ..... DELKER
DAY ..... DAYTON
DEN ..... DENNISON
DIA ..... DIALIGHT
DII ..... DATONA INDUSTIRES INCORPORATED
DIL ..... DIELECTRIC LABS
DKK ..... DOW KEY/KILOVAC
DLS ..... DALLAS SEMICONDUCTOR
DSC ..... DE-STA-CO
DTP ..... DOYLESTOWN PRINTING
DUP ..... DU PONT ELECTRONICS
D-E ..... DARBURN ELECTRONICS
D-G ..... DIMCO-GRAY
D-K ..... DIGI-KEY-CORPORATION
EBM ..... EBM IND.
ECO ..... EATON CORPORATION
ECS ..... ECS INTERNATIONAL
EFJ ..... E.F.JOHNSON
EGG ..... EG & G OPTOELECTRONICS
EGL ..... ELGAL
EIC ..... ELCTRO INSULATION CORPORATION
EIM ..... EIMAC
ELC ..... ELECTRO SWITCH CORPORATION
ELM ..... ELMENCO
ELR ..... ENGLER INSTRUMENT
EMC ..... E.M.C. TECHNOLOGY
EMI ..... ELECTRONIC MEASUREMENTS,INC.
EMM ..... ENGLEMANN MICROWAVE
EOD ..... ELECTRO-OPTIC DEV
ERI ..... ERIE TECHNOLOGY PRODUCTS
ERM ..... EREM CORPORATION
ESX ..... ESSEX
ETA ..... ETA
EVE ..... EVEREST ELECTRONIC EQUIPMENT
EVR ..... EVEREADY
EWS ..... ELMWOOD SENSOR
E-C ..... EMERSON AND CUMMING
EZF ..... EZ FORM CABLE CORPORATION
FCH ..... FAIRCHILD
FCI ..... FILTER CONCEPTS INCORPORATED
FER ..... FERRONICS
FEX ..... FERROXCUBE
FLO ..... FLO TRAN PNEU-DRAULICS INCORPORATED
FOS ..... FIBRE OPTIC COMMUNICATION SPECIALTIES

FRA ..... FRANZUS
FRK ..... FROST KING
FRM ..... FREEDMAN MALTA
FRP ..... FAIR-RITE PRODUCTS
FUJ ..... FUJITSU
FWC ..... FW CAPACITORS
F-S ..... FASTENER SPECIALTY
GAL ..... GALLAGER
GCE ..... G.C. ELECTRONICS
GCS ..... GLOBAL COMPUTER SALES
GEM ..... GEM
GDC ..... GENERAL DEVICES CO.
GOL ..... GOLDKAMP
GRA ..... GRAINGER
GRE ..... GREYARC
GRS ..... GENERAL RADIO SUPPLY
GRY ..... GRAYHILL CORP
GSI ..... GSI
GTL ..... GILWAY TECHNICAL LAMP
G-E ..... GENERAL ELECTRIC COMPANY
G-I ..... GENERAL INSTRUMENT
HAD ..... HARRY DAVIES
HAN ..... HANSON
HAR ..... HARRIS CORP
HAV ..... HAVERHILL CABLE AND MANUFACTURING
HDB ..... HOMER D. BRONSON
HEC ..... HIGH ENERGY CORPORATION
HEI ..... HEINEMANN
HEY ..... HEYCO MOLDED PRODUCTS
HEX ..... HEXACON
HHS ..... H.H. SMITH
HII ..... HOLODAY INDUSTRIES INCORPORATED
HIM ..... HITACHI MAGNETS
HMF ..... HILTON MANUFACTURING
HMN ..... HENRY MANN
HOL ..... HOLLINGSWORTH
HOW ..... HONEYWELL
HPC ..... H.P.CADWALLADER
HSI ..... HUBER & SUHNER INCORPORATED
HUB ..... HUBBEL
HUC ..... HUDSON CAN COMPANY
HUV ..... HANDLES UNLIMITED VERMALINE DIV.
HWK ..... HAWKINS METAL FABRICATION
H-C ..... HARTWELL CORP. COMMERCIAL DIVISION
H-P ..... HEWLETT PACKARD
H-R ..... HERBACH & RADEMAN
IBM ..... IBM
ICI ..... ILLINOIS CAPACITOR INCORPORATED
IDE ..... IDEAL
IER ..... IERC
ILS ..... ILSCO
IMB ..... IMB
IMC ..... IMC
INC ..... INTERNATIONAL CRYSTAL MFG COMPANY

INM ..... INMET
IPI ..... INSULFAB PLASTICS INCORPORATED
IRC ..... INTERNATIONAL RESISTIVE COMAPNY, INC.
IRM ..... IR-CRYDOM
ITF ..... ITERFAN
ITJ ..... ITT-JENNINGS
ITT ..... ITT CANNON
I-E ..... IMPERIAL EASTMAN
I-G ..... INDIANA GENERAL
I-R ..... INTERNATIONAL RECTIFIER CORPORATION
I-S ..... INSTRUMENT SPECIALTIES
JAR ..... J.A. REINHARDT
JDE ..... JOHANSON DIELECTRICS
JER ..... JERGENS INCORPORATED
JFD ..... JFD
JOH ..... JOHANSON
JON ..... JONATHAN MANUFACTURING
JOR ..... JORITA
JSR ..... JAY-CEE SALES & RIVET INC.
KCC ..... KEYSTONE CARBON COMPANY
KEY ..... KEYSTONE ELECTRONICS
KIN ..... KINGS
KLE ..... KLEIN
KSD ..... KESTER SOLDER DIVISION
KUL ..... KULKA
K-D ..... KD COMPONENTS
LAF ..... LAFRANCE CORPRATION
LBA ..... LAMBDA ELECTRONICS INCORPORATED
LEM ..... LIAISONS ELECTRONIQUES MECHANIQUES
LEV ..... LEVITON MANUFACTURING COMPANY
LIF ..... LITTLEFUSE
LOC ..... LOCTITE CORPORATION
LOR ..... LORD CORPORATION
MAC ..... MACOM
MAL ..... MALLORY
MAR ..... MARKEL CORPORATION
M-C ..... MICROCHIP
MCG ..... McGILL
MCR ..... MICREL INCORPORATED
MCS ..... McMASTER CARR SUPPLY COMPANY
MCX ..... MICRO-COAX
MDP ..... MODPAK
MEA ..... MITSUBISHI ELECTRONICS AMERICA, INC.
MEP ..... MEPCO-ELECTRA
MET ..... METUCHEN CAPACITOR
MFG ..... MANUFACTURER
MHW ..... M.H. & W. COMPANY
MIC ..... MICROMETALS IRON POWDER CORES
MIN ..... MINI-CIRCUITS
MIP ..... MICRO PLASTICS
MIR ..... MINOR RUBBER COMPANY
MIS ..... MICROSWITCH
MIT ..... MULTITHERM CORPORATION
MLC ..... M. LADER COMPANY

MLX ..... MILL-MAX CORP
MMI ..... MAGNETIC METALS INCORPORATED
MMM ..... MINNESOTA MINING MANUFACTURING
MOC ..... MOCAP
MOD ..... MODUTEC
MOL ..... MOLEX
MOR ..... MORS COMPONENTS INC
MON ..... MONSANTO
MOS ..... M/A-COM OMNI SPECTRA INCORPORATED
MOT ..... MOTOROLA
MPC ..... MULTI-PRODUCTS
MRS ..... MARSH
MSC ..... MICROSEMI CORPORATION
MUE ..... MUELLER
MUR ..... MURATA/ERIE
MWA ..... MICROWAVE ASSOC
MWC ..... MIDWEST COMPONENTS
MWM ..... MIDWEST MICROWAVE
MWS ..... MICROWAVE SEMI-CONDUCTORS
M-C ..... M & C SPECIALTIES
M-E ..... MASTER ELECTRICIAN
M-M ..... MULTI-MAX CORPORATION
NAB ..... NORTH AMERICAN BRASS AND COPPER
NEB ..... NEBS INCORPORATED
NET ..... NETEK
NEW ..... NEWAGE INDUSTRIES
NIC ..... NIC COMPONENTS
NIE ..... NIELSEN HARDWARE
NJS ..... N.J. SEMI
NKK ..... NKK SWITCHES
NMB ..... NMB TECHNOLOGIES INCORPORATED
NOB ..... NOBLITT BROTHERS & COMPANY
NPP ..... NORTH PENN POLISHING & PLATING
NSI ..... NATIONAL SEMI-CONDUCTOR CORPORATION
NVS ..... NORTHAMPTON VALLEY SERVICE COMPANY
N-M ..... NATIONAL MOLDITE
N-P ..... NEM-PACK
OAP ..... OLEAN ADVANCED PRODUCTS
OHA ..... OHIO ART
OHN ..... OHMLITE
OKI ..... OK INDUSTRIES
OME ..... OMEGA
OMR ..... OMRON
OPM ..... OPTIMA
OPT ..... OPTIMAX
PAE ..... PACIFIC ELECTRICORD
PAJ ..... PHILLIPS AND JACOBS
PAM ..... PAMOTOR
PAN ..... PANASONIC
PAP ..... PAPST
PBC ..... POTTER & BRUMFIELD CORPORATION
PCI ..... PENN CRAFT INDUSTRIES
PEC ..... PENN CONTROLS
PCC ..... PANEL COMPONENTS CORPORATION

PEK ..... PEAK
PEN ..... PENN ENGINEERING
PFL ..... POLYFLON
PFS ..... POWER FILM SYSTEMS
PHC ..... PARKER HANNIFIN CORPORATION
PHI ..... POWER HYBRID
PLM ..... PLASTIC & METALS
PMP ..... PRECISION METAL PROD.
PMI ..... PRECISION MONOLITHICS INC.
PNT ..... PANDUIT
P-O ..... POWER ONE
POW ..... POWEREX
PRC ..... PRECISION RUBER COMPANY
PSI ..... POWER SEMI-CONDUCTOR INCORPORATED
PSP ..... PROJECT SUPPORT INCORPORATED
PTC ..... PRECISION TUBE COMPANY
P-B ..... PENN-BASCO
QUI ..... QUICKSET
RAF ..... R.A.F. ELECTRONIC HARDWARE INCORPORATED
RCA ..... RCA
RCC ..... RAYCHEM CORPORATION
RCL ..... RCL
REL ..... RELIANCE MICA COMPANY
REM ..... REMTEK
RES ..... ROSE ENCLOSURES SYSTEMS
RFP ..... RF POWER COMPONENRS INC
RIC ..... RICHCO
ROG ..... ROGAN
RON ..... RONCO CORPORATION
ROS ..... ROSS ENGINEERING
ROT ..... ROTRON
ROW ..... ROWLAND
RPC ..... REPUBLIC PACKAGING CORPORATION
RUS ..... RUSSEL INDUSTRIES
R-H ..... RYAN HERCO
R-N ..... ROBINSON-NUGENT
R-S ..... RADIO SHACK
SAG ..... SAGE LABORATORIES
SAM ..... SAMTECH
SBC ..... SCHROEDER BROTHERS CORPORATION
SCD ..... SCHADOW
SCH ..... SCHAUER
SCI ..... SPECTRUM CONTROL INCORPORATED
SCO ..... SCOTCH
SEA ..... SEASTROM INCORPORATED
SEL ..... SELECTRO CORPORATION
SEM ..... SEMIKRON
SEV ..... SEVENTY-THREE MANUFACTURING COMPANY
SGL ..... SGL INDUSTRIES
SGS ..... SGS
SIE ..... SIEMENS
SIG ..... SIGNETICS
SIM ..... SIMPSON
SLE ..... SL ELECTRONICS

SOC ..... SOUTHCO
SOE ..... STANDARD OIL ENGINEERING
SOH ..... SOHIO
SOL ..... SOLDAPULLT
SOW ..... SOLDER WICK
SPC ..... SPC TECHNOLOGY
SPE ..... SPECTROL
SPL ..... SPRA-LUBE
SPR ..... SPRAGUE
SPS ..... SPRINGFIELD PAPER SPECIALISTS
SSI ..... SWITCHING SYSTEMS INTERNATIONAL
SSM ..... SOLD STATE MICROWAVE
SSS ..... S & S TECH
SST ..... SST
STA ..... STANCOR
STB ..... SEAL-TITE BAG COMPANY
STI ..... STIMPSON
STM ..... SEASTROM MANUFACTURING COMPANY
STP ..... STACKPOLE
STW ..... STOCKWELL
SUS ..... SUNSHINE SCIENTIFIC
SWC ..... SWITCHCRAFT
SHW ..... STEWERT-WARNER HOBBS DIVISION
S-B ..... SPEED BEND
S-E ..... STEMCO ENGLER
S-F ..... SYDNEY FRIEDRICH
S-L ..... SWAGELOCK
S-M ..... STRIP-MASTER
TAB ..... THOMAS & BETTS
TAI ..... TAI CORPORATION
TAN ..... TANSISTOR
TCC ..... THOMSON PASSIVE COMPONENTS CORP
TCI ..... TRA-CON INCORPORATED
TEC ..... TECKNIT
TEL ..... TELEFUNKEN
TEM ..... TEMPIL
TET ..... TECHNITOOL
TFI ..... THRUWAY FASTNERS INCORPORATED
THM ..... THERMALLOY
THS ..... THREADED SCREW PRODUCTS COMPANY
TII ..... TEXAS INSTRUMENTS INCORPORATED
TMS ..... TIMES MICROWAVE SYSTEMS
TRD ..... TRIAD
TRI ..... TRI-COUNTY
TRS ..... TRI-STATE
TRT ..... TRAVERS TOOL COMPANY
TRW ..... TRW
TUS ..... TUSONIX
TXS ..... TEXAS SPECTRUM
T-P ..... THOMAS PRODUCTS
UEC ..... UNITED ELECTRIC
ULI ..... ULINE
UNC ..... UNICORP
UN ..... UNELCO

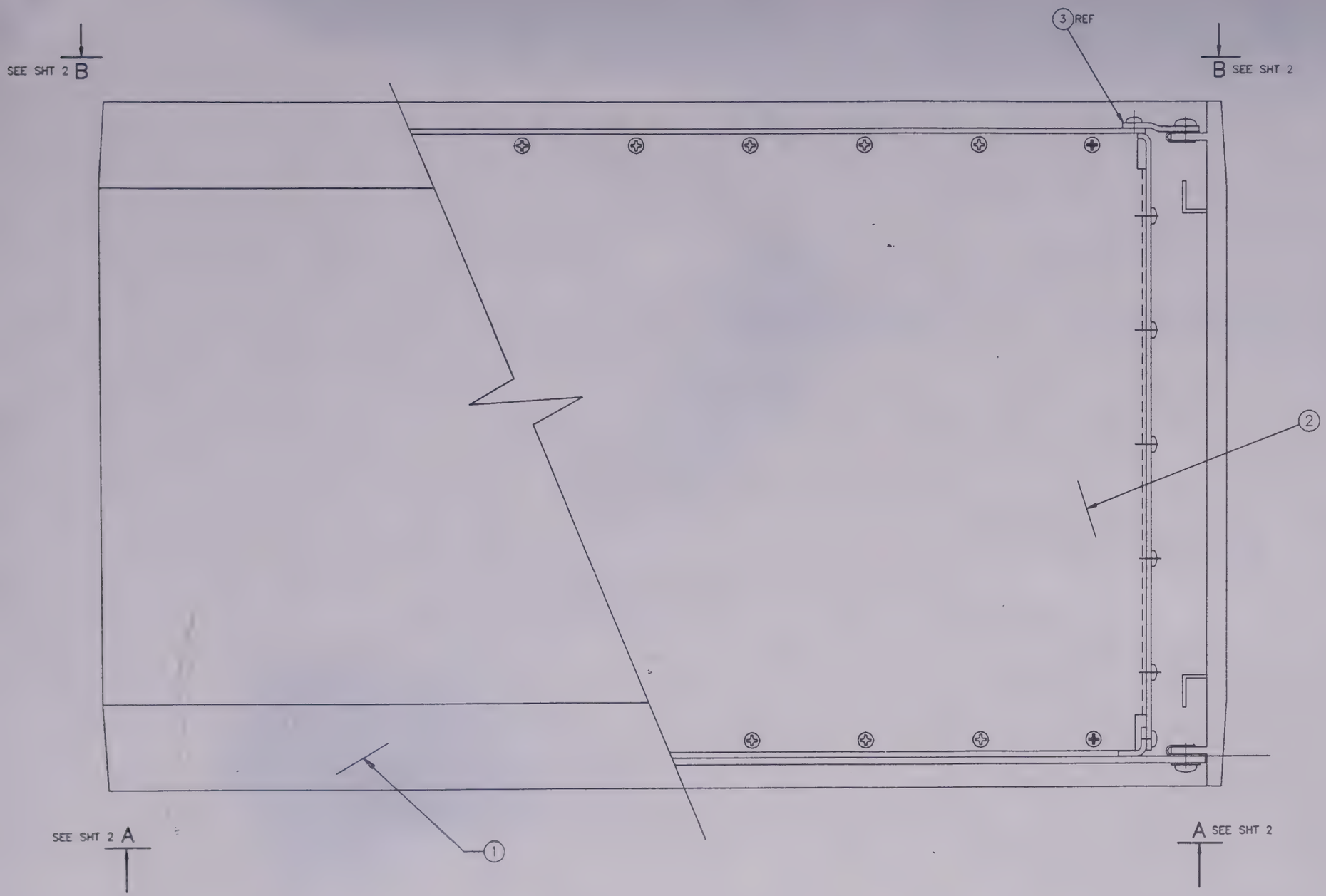
UNI ..... UNIROYAL
USC ..... USECO
UTI ..... UTICA
V-C ..... VICOR INC.
VIC ..... VICTOREEN
VIT ..... VITRAMON
VLR ..... VLEIR
VOL ..... VOLTRONICS CORPORATION
WAG ..... WAGO COPR
WAK ..... WAKEFIELD
WAL ..... WALDOM
WCO ..... WECO
WEC ..... WESTERN ENTERPRISES COMAPNY
WEI ..... WEICO
WEL ..... WELLER
WES ..... WEINSTEIN
WGV ..... WARREN G-V
WIL ..... WILTRON
WIS ..... WEBER INDUSTRIAL SUPPLY COMPANY
WIT ..... WITTEK DIVISION, A MICRODOT COMPANY
WPI ..... WIRE PRODUCTS INCORPORATED
WPS ..... WORKPLACE SYSTEM
WSC ..... WEST POINT SUPPLY COMPANY
WWP ..... WESTERN WIRE PRODUCTS
W-E ..... WELLS ELECTRONIC INCORPORATED
W-I ..... WEIDMULLER INCORPORATED
W-L ..... WARD LEONARD
XAC ..... X-ACTO
XCA ..... XCELITE
YNG ..... YOUNGS
YPC ..... YARDLEY PRODCTS CORPORATION
ZER ..... ZERO MANUFACTURING COMPANY
ZIE ..... ZIERIC

BILL NO: 1008099-501M REV: A U/M: EA DRAWING NO:
MDL.25W1000A

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0010	1008100	-	ASSY DWG,MODEL 25W1000A	EA	REF	ARC-D\1008100	R(B)
0020	1008100-501	-	MODEL 25W1000A,1-1000MHz,25 WATTS	EA	REF	ARC-D\1008100	BOM
0030	1007244	D	SCHEM DIAG,30W1000M7	EA	REF	ARC-C\1007244	R(A)
0040	1008090	B	ASSY DWG,AMPL ASSY	EA	REF	ARC-D\1008090	R(B)
0050	1008090-501	-	AMPL ASSY	EA	REF	ARC-D\1008090	BOM
0060	1007242	B	ASSY DWG,PS ASSY,30W1000M7	EA	REF	ARC-D\1007242	R(B)
0070	1007242-501	F	PS ASSY	EA	REF	ARC-D\1007242	BOM
0080	1007245-501	B	HARNESS ASSY	EA	REF		BOM
0090	1007246	C	ASSY DWG,CTRL PNL ASSY,30W1000M7	EA	REF	ARC-D\1007246	R(B)
0100	1007246-501	E	CTRL PNL ASSY	EA	REF	ARC-D\1007246	BOM
0110	1007247	-	ASSY DWG,REAR PNL ASSY,30W1000M7	EA	REF	ARC-D\1007247	R(B)
0120	1007247-501	B	REAR PNL ASSY	EA	REF	ARC-D\1007247	BOM
0130	1007229	C	SCHEM DIAG,FAULT BD	EA	REF	ARC-C\1007229	R(A)
0140	1007227	B	ASSY DWG,PWB ASSY,FAULT BD	EA	REF	ARC-C\1007227	C
0150	1007227-501	C	PWB ASSY,FAULT BD	EA	REF	ARC-C\1007227	BOM
0160	1007275	C	BLOCK DIAG,RF AMPL	EA	REF	ARC-B\1007275	R(A)
0170	1008091	A	ASSY DWG,RF ASSY	EA	REF	ARC-D\1008091	R(B)
0180	1008091-501	B	RF ASSY	EA	REF	ARC-D\1008091	BOM
0190	1008092	-	SCHEM DIAG,DRIVER MODULE	EA	REF	ARC-D\1008092	R(B)
0200	1008093	-	ASSY DWG,PWB ASSY,DRIVER W/INPUT LEVELING	EA	REF	ARC-C\1008093	C
0210	1008093-501	-	PWB ASSY,DRIVER W/INPUT LEVELING	EA	REF	ARC-C\1008093	BOM
0220	1008094	-	SCHEM DIAG,10 WATT DRIVER AMP	EA	REF	ARC-C\1008094	R(A)
0230	1008095	B	ASSY DWG,PWB ASSY,10 WATT AMP	EA	REF	ARC-C\1008095	C
0240	1008095-501	A	PWB ASSY,10 WATT AMP	EA	REF	ARC-C\1008095	BOM

BILL NO: 1008099-501M REV: A U/M: EA DRAWING NO:
MDL,25W1000A

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0250	1008096-501	A	COMPNT KIT,PWB ASSY,10 WATT AMP	EA	REF		BOM
0260	1008103	B	SCHEM DIAG,WC SERIES MODULE	EA	REF	ARC-D\1008103	D
0270	1008101	C	ASSY DWG,PWB ASSY,WC SERIES MODULE	EA	REF	ARC-D\1008101	D
0280	1008101-501	C	PWB ASSY,WC SERIES MODULE	EA	REF	ARC-D\1008101	BOM



FOR BOM SEE 1008100-501

SHEET	1	2
REV	–	–

ITEM	QTY. REQD.	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND MILLIDE PLATING THICKNESS
ALL THREADS ARE UNIFIED NATIONAL STANDARD CLASS 2
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	±.02	±.005
ABOVE 6 TO 24	±.03	±.010
ABOVE 24	±.06	±.015
ANGULAR DIMENSIONS ±1°		

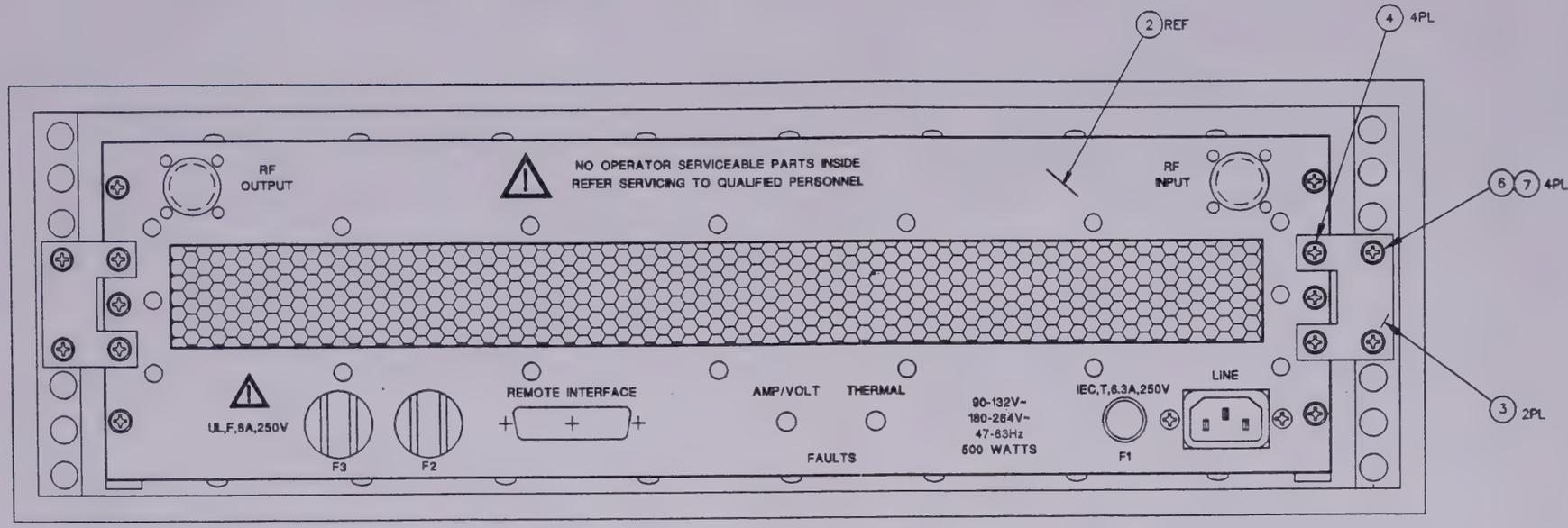
DRAWN: M. BICKELMAN, DATE 29 MAY 98
CHKD: M. BICKELMAN, DATE
MECH: DATE
ELEC: DATE
25W1000A USED ON MODEL

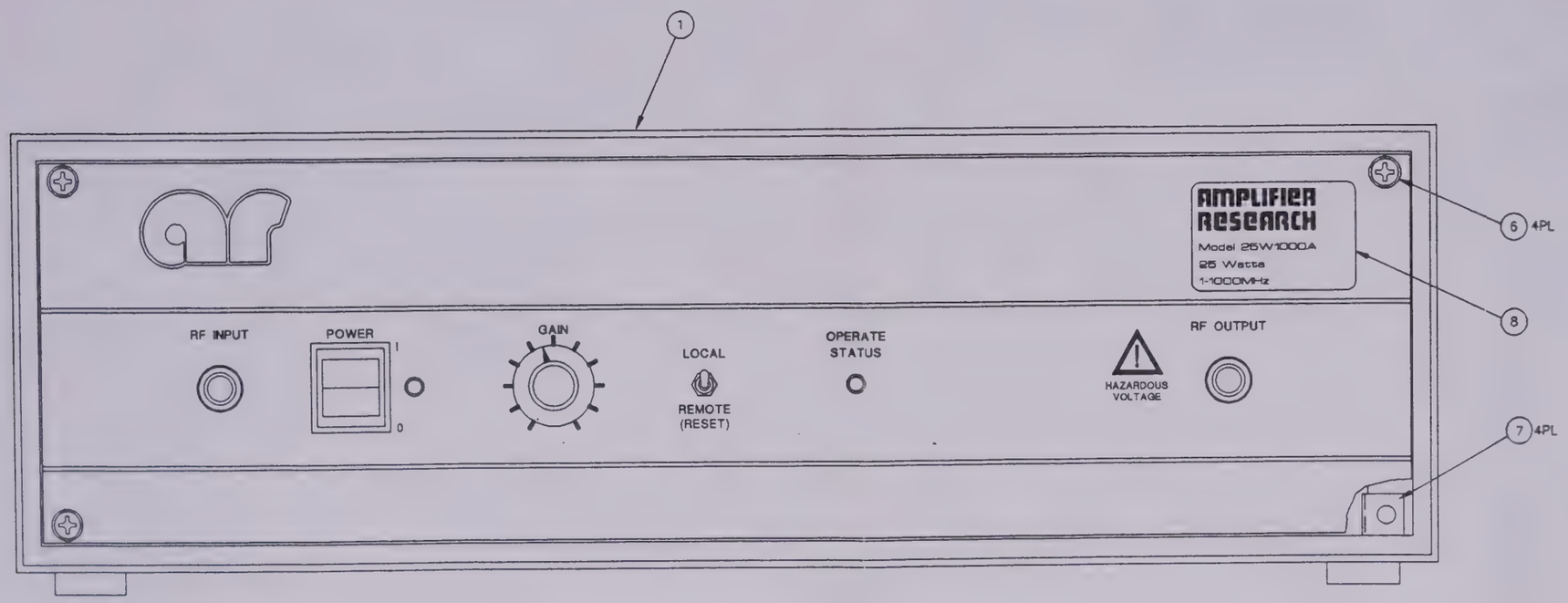
AMPLIFIER RESEARCH

MODEL 25W1000A

DWG. NO. 1008100

SCALE 1/1 SHEET 1 OF 2 REV –





SECTION A–A

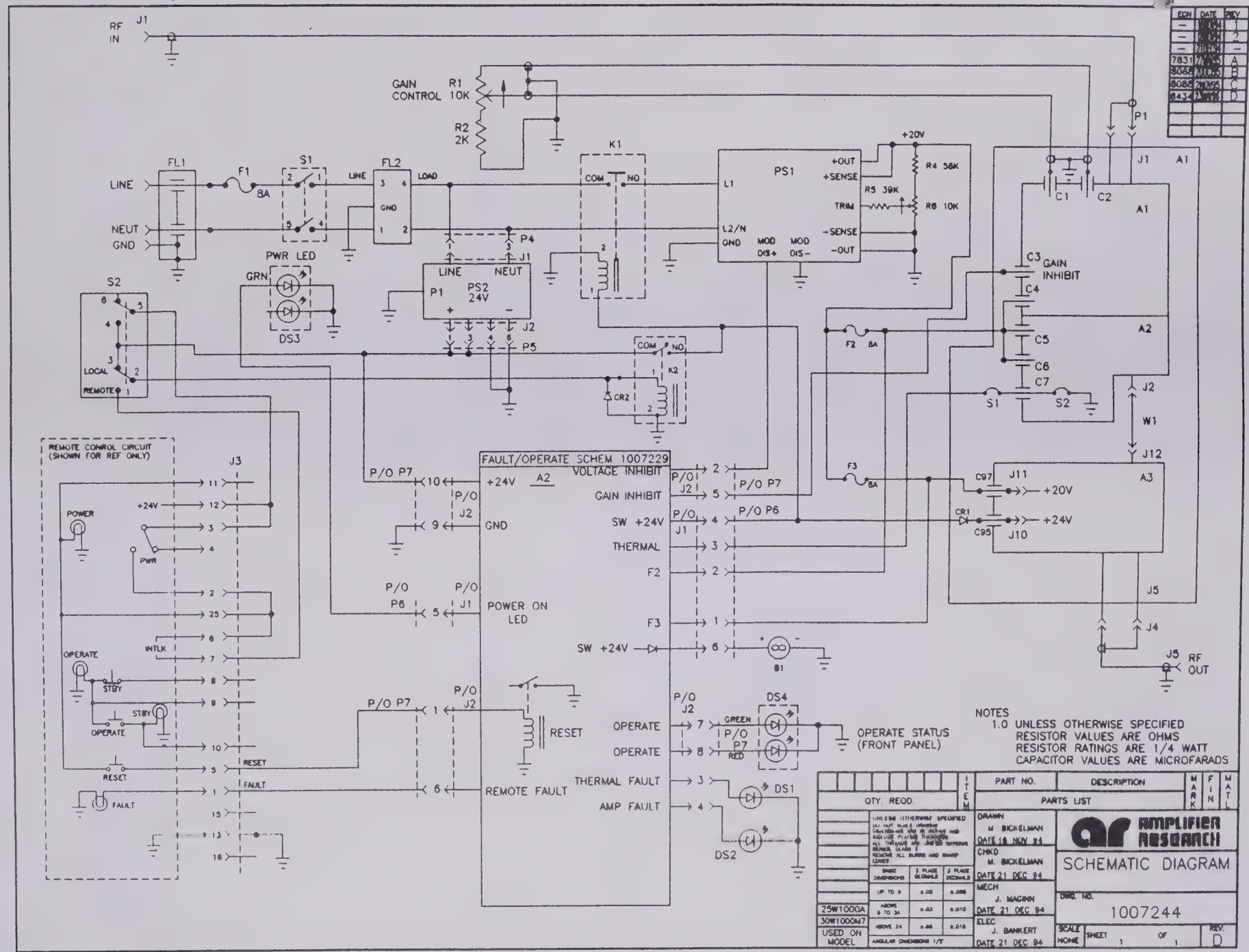
DWG. NO	
	1008100
SCALE 1/1	SHEET 2 OF 2

AMPLIFIER RESEARCH

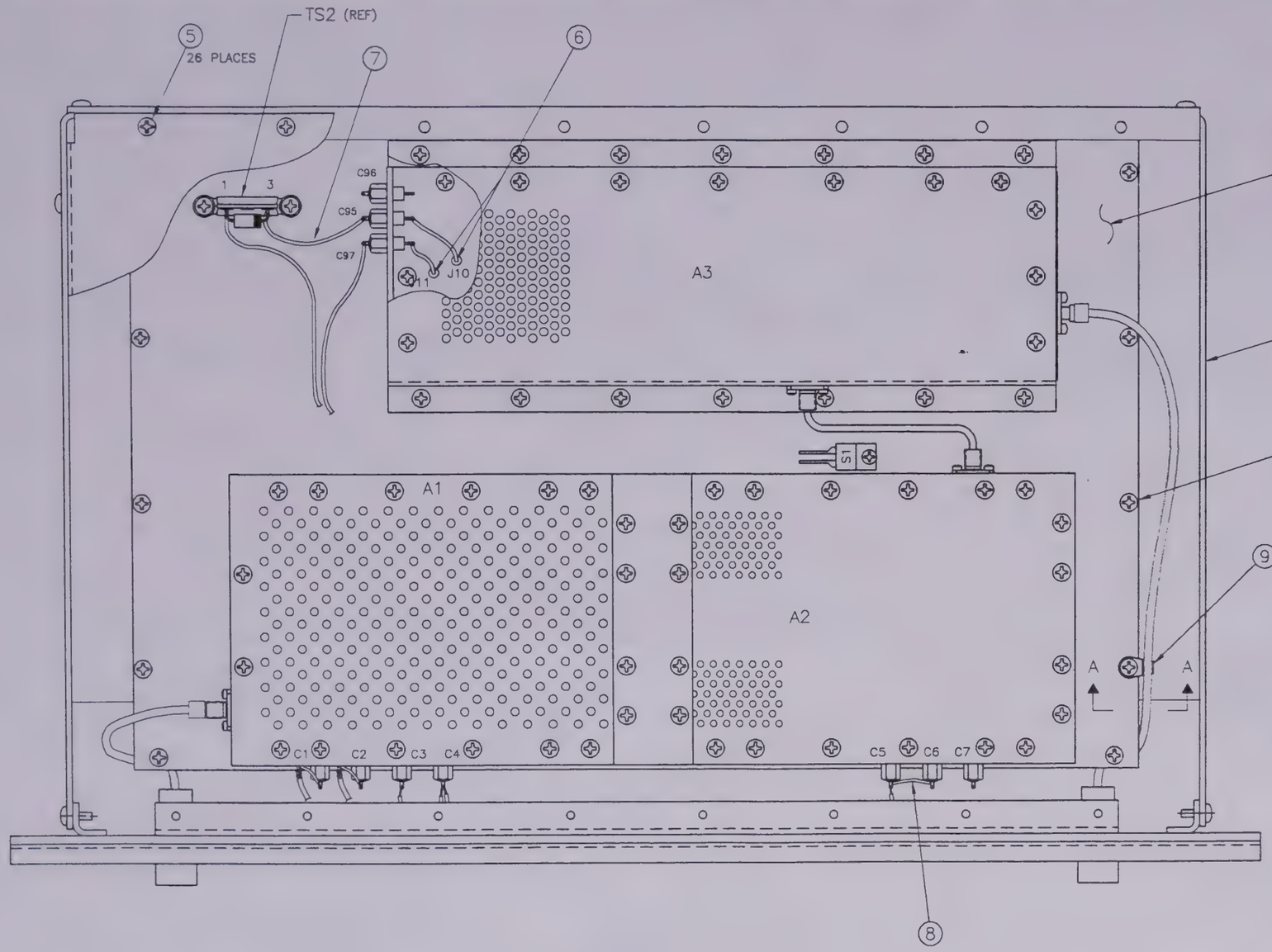
14:26:12 26 NOV 1997 * * * SINGLE LEVEL BILL OF MATERIAL LISTING * * * REPORT: E0056 PAGE: 1

BILL NO: 1008100-501 REV: - U/M: EA DRAWING NO: ARC-D\1008100
MODEL 25W1000A,1-1000MHz,25 WATTS

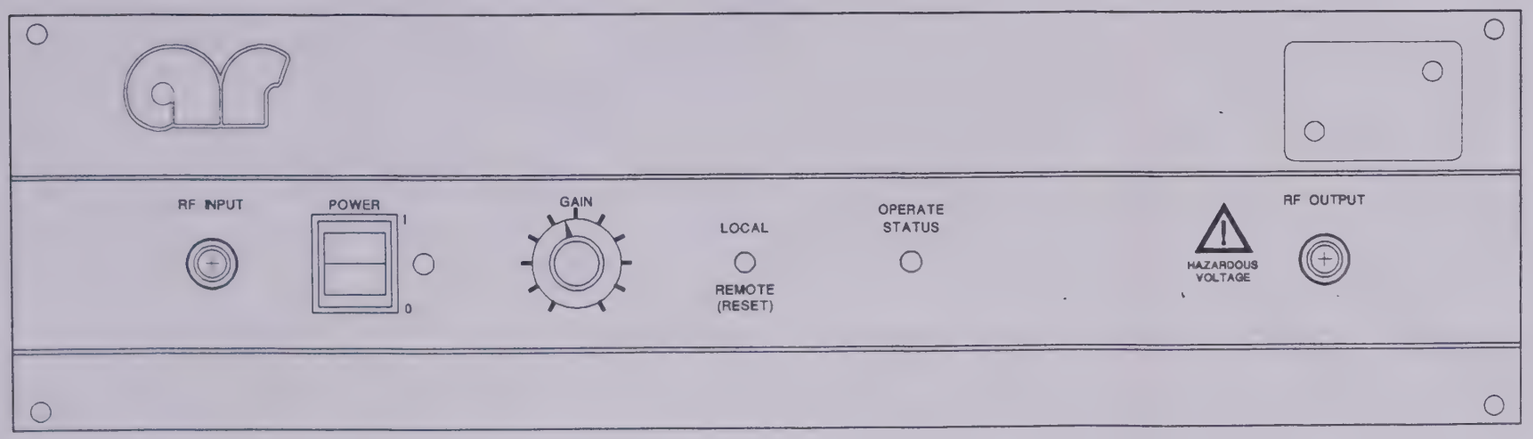
SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
5000	1001576-311	M	CABINET,INST CASE,PERF BOT PNL,5.25 H,10.8 D	EA	1.000	ARC-B\1001576	1
5010	1008090-501	-	AMPL ASSY	EA	1.000	ARC-D\1008090	2
5020	1007220-101	A	BRKT,MTG	EA	2.000	ARC-B\1007220	3
5030	11019		SCREW,MACH,PAN HD,CROSS-REC,S/ZN,6-32X.50,TYPE SW	EA	4.000		4
5040	94027		SCREW,PNL,DECORATIVE,WITH NYLON WASH	EA	8.000	OPM\HW-1	6
5050	14043		FASTENER,"U" TYPE,10B SCREW,PNL RANGE .125-.160	EA	8.000	ECO\C14810-102	7
5060	1007226-101-F1-M111	AG	PL,MODEL NO,25W1000A	EA	1.000	ARC-A\1007226	8
5070	66147		PWR CORD,3 COND,18AWG,UNIV DTCH	EA	1.000	PAE\C3120-008-BL	
5080	1008099-501		MANUAL,MODEL 25W1000A	EA	4.000		
5090	1007296-501	A	SPARE PARTS KIT	EA	1.000		

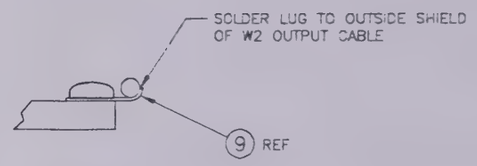

RF IN J1
GAIN CONTROL R1 10K
R2 2K
LINE
NEUT
GND
FL1
F1 8A
S1
FL2
LOAD
K1
COM NO
PS1
+OUT
+SENSE
TRIM
-SENSE
-OUT
L1
L2/N
GND
MOD DIS+
MOD DIS-
+20V
R4 56K
R5 39K
R6 10K
P1
J1 A1
C1 C2
C3 GAIN INHIBIT
C4 C5 C6 C7
A2
S1 S2
J2
W1
J12
A3
J11
J10
J5
J4
J5 RF OUT
PWR LED
GRN
DS3
PS2 24V
P4
P5
J2
S2
LOCAL
REMOTE
CR2
K2
F2 8A
F3 8A
C97
C95
CR1
REMOTE CONROL CIRCUIT (SHOWN FOR REF ONLY)
J3
POWER
PWR
OPERATE
STBY
INTLK
RESET
FAULT
FAULT/OPERATE SCHEM 1007229
VOLTAGE INHIBIT
+24V A2
GAIN INHIBIT
SW +24V
THERMAL
F2
F3
GND
POWER ON LED
RESET
REMOTE FAULT
THERMAL FAULT
AMP FAULT
OPERATE
OPERATE
P/O P7
P/O P6
P/O J1
P/O J2
B1
DS4
GREEN
RED
DS1
DS2
OPERATE STATUS (FRONT PANEL)
NOTES
1.0 UNLESS OTHERWISE SPECIFIED
RESISTOR VALUES ARE OHMS
RESISTOR RATINGS ARE 1/4 WATT
CAPACITOR VALUES ARE MICROFARADS
ITEM
QTY. REQD.
PART NO.
DESCRIPTION
PARTS LIST
MARK
FIN
MATL
DRAWN M. BICKELMAN DATE 18 NOV 94
CHKD M. BICKELMAN DATE 21 DEC 94
MECH J. MAGINN DATE 21 DEC 94
ELEC J. BANKERT DATE 21 DEC 94
25W1000A
30W1000M7
USED ON MODEL
AMPLIFIER RESEARCH
SCHEMATIC DIAGRAM
DWG. NO. 1007244
SCALE NONE
SHEET 1 OF 1
REV. D

ECN	DATE	REV
–	[illegible]	–
9047	[illegible]	A
9165	[illegible]	B



AWG	COLOR	TO		FROM	
22	SHLD	C1	(CENTER)	R1–1	
		C1–GND LUG	(SHEILD)	R1–GND LUG	
22	SHLD	C2	(CENTER)	R1–2	
		C2–GND LUG	(SHEILD)	R1–GND LUG	
22	WHT	C3		P7–5	
16	BLU	C4		XF2–2	
16	BLU	C4		C5	
16	BLU	C5		C6	ADD ITEM 8
22	WHT/VIO	C7		S1–2	
22	VIO	S1–1		P6–3	
22	RED	TS2–1		K2–COIL–1	
22	RED	TS2–3		C95	ADD ITEM 7
16	BLU	C97		XF3–2	





DETAIL A–A

SCALE 2:1

FOR BOM SEE 1008090-501

ITEM	QTY. REQD.	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING DIMENSIONS ARE IN INCHES AND MACHINING TOLERANCES ARE AS FOLLOWS UNLESS OTHERWISE SPECIFIED ALL RADII ARE .XXX MAX

DECIMALS	FRACTIONS	ANGLES
.X ± .1	± 1/32	± 1°
.XX ± .03		
.XXX ± .010		

USED ON MODEL

DRAWN W. BICKELMAN DATE 20 MAY 98

CHKD W. BICKELMAN DATE 20 MAY 98

MECH W. MAGINN DATE 28 JUN 98

ELEC J. BANKERT DATE 26 JUN 98

AMPLIFIER RESEARCH

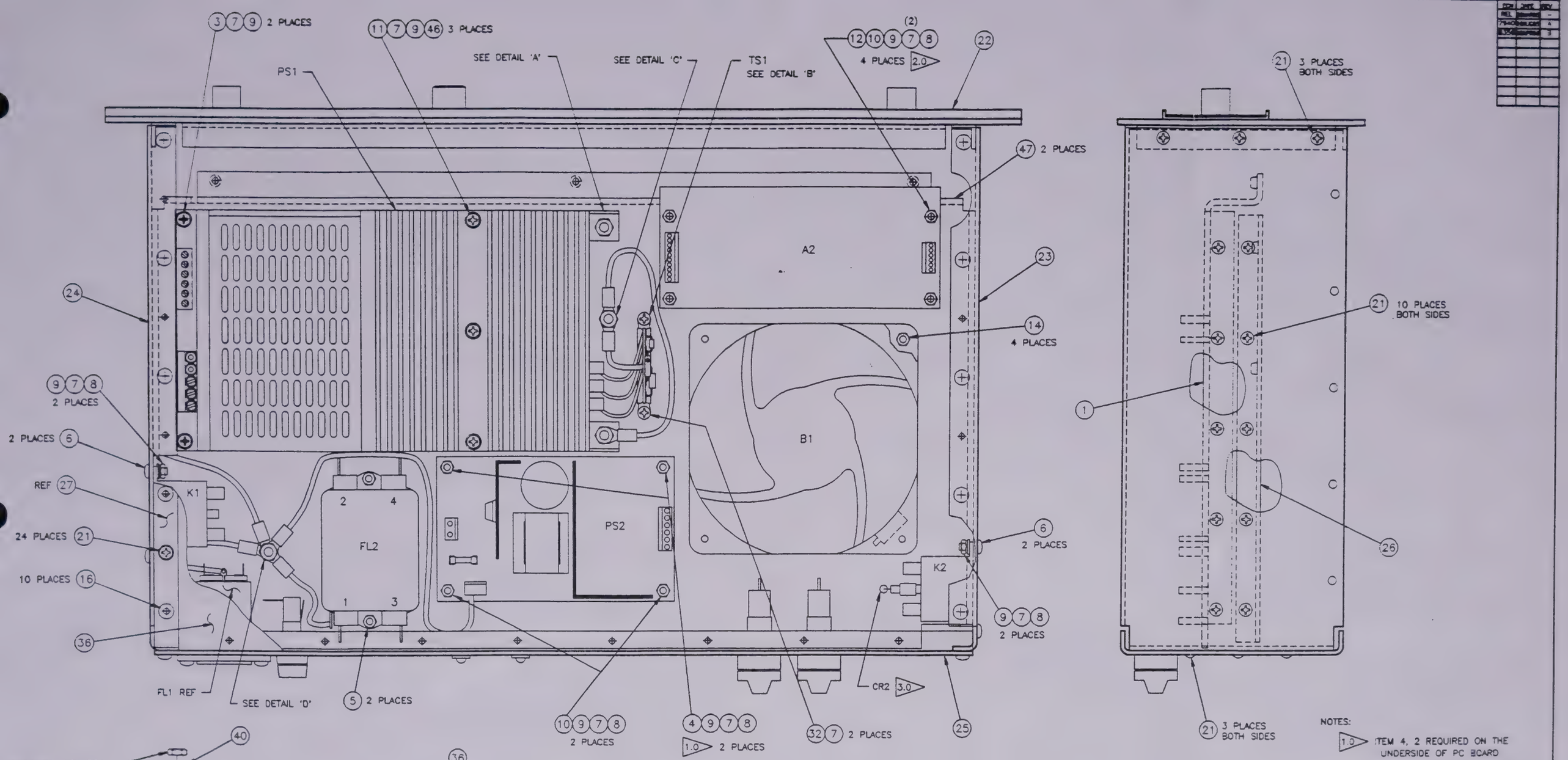
AMP ASSY

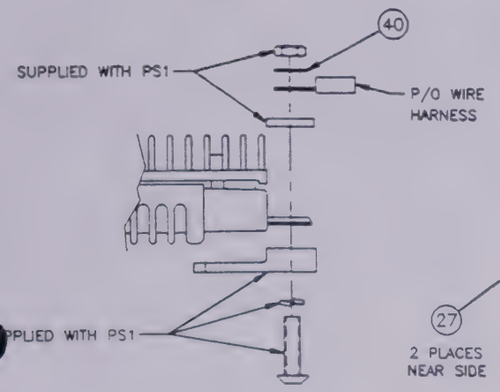
DWG. NO. 1008090

SCALE 1/1 SHEET 1 OF 1 REV B

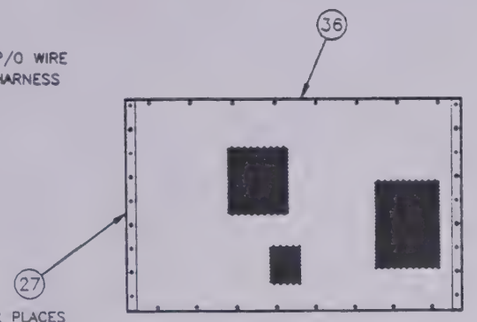
BILL NO: 1008090-501 REV: - U/M: EA DRAWING NO: ARC-D\1008090
AMPL ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
5000	1007242-501	F	PS ASSY	EA	1.000	ARC-D\1007242	1
5010	1008091-501	B	RF ASSY	EA	1.000	ARC-D\1008091	2
5020	1007216-101	A	COVER,TOP	EA	1.000	ARC-D\1007216	3
5030	11021		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X .62	EA	11.000	\MS51957-31	4
5040	11137		SCREW,MACH,PAN HD,CROSS-REC,S/ZN,6-32X.31,TYPE SW	EA	26.000		5
5050	41117		PIN,CONN	EA	2.000	CAM\460-3308-01-03	6
5060	66027		WIRE,TFE,22 AWG,STRANDED,TYPE E,RED	IN	A/R		7
5070	66013		WIRE,TFE,16 AWG,STRANDED,TYPE E,BLU	IN	A/R		8
5080	69100		LUG,SHAKEPROOF,BENT,41/64 L,#6 STUD,DUAL HOLE	EA	1.000	HHS\1416-6	9

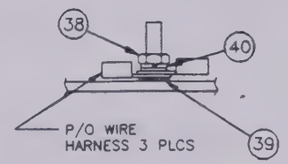




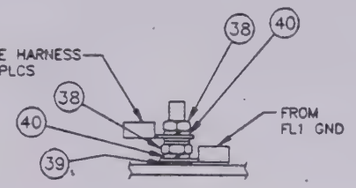
DETAIL A
TYP 2 PLACES



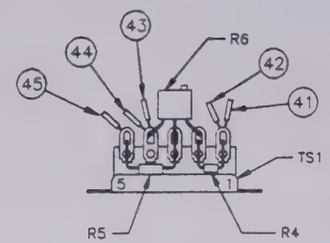
GLIDES TO BE PLACED ON PANEL AS SHOWN



DETAIL C



DETAIL D



DETAIL B

NOTES:

1.0 ITEM 4, 2 REQUIRED ON THE UNDERSIDE OF PC BOARD

2.0 ITEM 12, INSTALL FROM OPPOSITE SIDE OF CHASSIS

3.0 INSTALL WITH HARNESS

FOR BOM SEE 1007242-501

ITEM	QTY. REQD.	PART NO.	DESCRIPTION	MARK	FIND	MATL
30			PARTS LIST			

UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING. DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS. ALL RADII ARE UNITED NATIONAL STANDARD, CLASS 3 ROUGHNESS ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
.0" TO 6"	± .02	± .030
ABOVE 6" TO 24"	± .05	± .010
ABOVE 24"	± .08	± .016

ANGULAR DIMENSIONS ± 1°

DRAWN M. BICKELMAN DATE 10 APR 95

CHKD M. BICKELMAN DATE 28 MAR 95

MECH J. MACHAN DATE 28 MAR 95

ELEC J. BANKERT DATE 28 MAR 95

AMPLIFIER RESEARCH

PS ASSY

DWG. NO. 1007242

SCALE 1/1 SHEET 1 OF 1 REV. B

NEXT ASSY

USED ON MODEL

BILL NO: 1007242-501 REV: F U/M: EA DRAWING NO: ARC-D\1007242
PS ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0010	1007244	D	SCHEM DIAG,30W1000M7	EA	REF	ARC-C\1007244	
0100	1007227-501	C	PWB ASSY,FAULT BD	EA	1.000	ARC-C\1007227	A2
0100	1007245-501	B	HARNESS ASSY	EA	1.000		
0200	37020	-	FAN,AXIAL,24 VDC,106 CFM,	EA	1.000	PAM\4124KX	B1
0700	1N4448		DIODE,SIGNAL,75V PIV	EA	1.000	FCH\1N4448	CR2
1400	35079		FILT,LINE,10 AMP,250VAC,50/60 HZ	EA	1.000	COR\10VV1	FL2
1700	43038		RELAY,PWR,FORM A CONTACTS,15A,24VDC COIL	EA	2.000	ARO\JA1ATMDC24V	K1 ,K2
2400	25043		PS,SWNG,24V,300W	EA	1.000	V-C\VI-MA3-ES	PS1
2410	25037		PS,SWNG,24V @ 1.6A	EA	1.000	CPI\NFS40-7624	PS2
2700	55612-5602J		RES,FXD,METAL FILM,56K,5%,1/4-/12W	EA	1.000	TRW\GP55-5602+/-5%	R4
2710	55612-3902J		RES,FXD,METAL FILM,39K,5%,1/4-1/2W	EA	1.000	TRW\GP55-3902+/-5%	R5
2720	55919		RES,VAR,CERMET,MULTITURN,TOP ADJ,10K,10%,1/2W	EA	1.000	BOR\3299Y-1-103	R6
3400	53006		TERM STRIP,5 TERMINAL	EA	1.000	SPC\LTS-205	TS1
5000	1007239-301	A	CHASSIS	EA	1.000	ARC-D\1007239	1
5020	11133		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32X.875	EA	2.000	\MS51957-33	3
5030	12044		WASH,FLAT,NYLON,.312 OD X .140 ID X .125 THK	EA	4.000	MIP\16FW006125	4
5040	13025		NUT,SELF-LOCK,HEX,REG HT,NYLON INSERT,S/S,6-32	EA	2.000	\MS21044C06	5
5050	11016		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X .38	EA	4.000	\MS51957-28	6
5060	12048		WASH,LOCK,SPLIT,S/S,#6	EA	19.000	\MS35338-136	7
5070	13004		NUT,HEX,S/S,6-32,.250AF	EA	12.000		8
5080	12011		WASH,FLAT,S/S,#6,.312 OD X .156 ID X .035 THK	EA	17.000	\MS15795-805	9
5090	14018		SPACER,HEX,THD,F,B W/NI,1/4 HEX X 1/4 LG X 6-32	EA	6.000	KEY\1451A	10
5100	11025		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X 1.50	EA	3.000	\MS51957-36	11
5110	11022		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X .75	EA	4.000	\MS51957-32	12

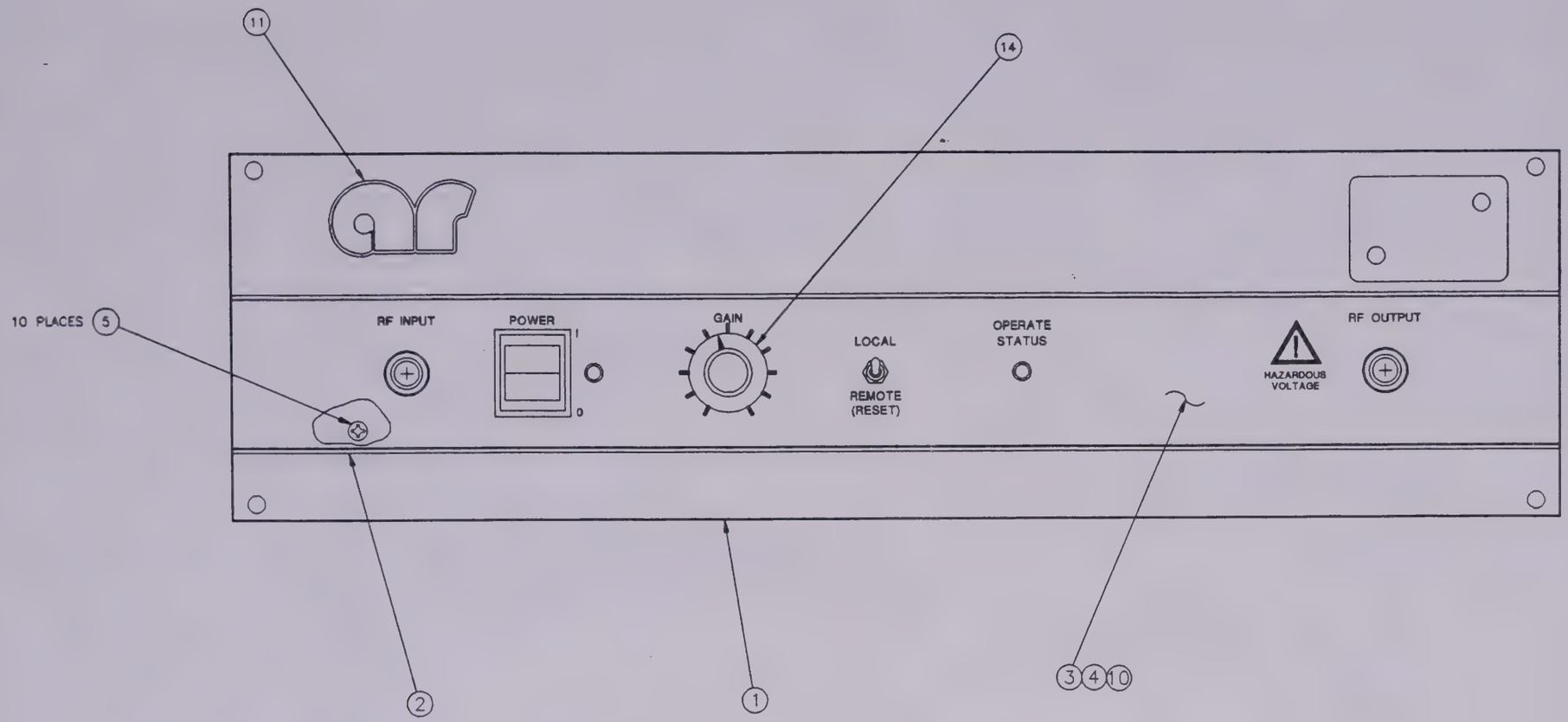
BILL NO: 1007242-501 REV: F U/M: EA DRAWING NO: ARC-D\1007242
PS ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
5130	13024		NUT,SELF-LOCK,HEX,REG HT,NYLON INSERT,S/S,4-40	EA	4.000	\MS21044C04	14
5150	69119		RIVET,GRIP-TITE,A,1/8"DIA,1/8"MAT'L THK	EA	10.000	GRA\4X641	16
5200	11137		SCREW,MACH,PAN HD,CROSS-REC,S/ZN,6-32X.31,TYPE SW	EA	56.000		21
5210	1007246-501	E	CTRL PNL ASSY	EA	1.000	ARC-D\1007246	22
5220	1007212-101	B	PNL,SIDE,RT	EA	1.000	ARC-D\1007212	23
5230	1007213-101	B	PNL,SIDE,LEFT	EA	1.000	ARC-D\1007213	24
5240	1007247-501	B	REAR PNL ASSY	EA	1.000	ARC-D\1007247	25
5250	1007209-301	-	BRKT,SIDE	EA	2.000	ARC-C\1007209	26
5260	1007214-101	-	GLIDE,CABINET	EA	2.000	ARC-B\1007214	27
5310	11014		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X .25	EA	2.000	\MS51957-26	32
5350	1007327-101	B	COVER,BOT	EA	1.000	ARC-D\1007327	36
5360	13007		NUT,HEX,S/S,10-32,.343AF	EA	3.000		38
5370	12059		WASH,LOCK,EXT TOOTH,S/S,#10	EA	2.000	\MS35335-60	39
5380	12050		WASH,LOCK,SPLIT,S/S,#10	EA	3.000	\MS35338-138	40
5390	66031		WIRE,TFE,22 AWG,STRANDED,TYPE E,BLU	IN	6.000		41
5400	66084		WIRE,TFE,22 AWG,STRANDED,TYPE E,WHT/BLU	IN	6.000		42
5410	66025		WIRE,TFE,22 AWG,STRANDED,TYPE E,BLK	IN	6.000		43
5420	66077		WIRE,TFE,22 AWG,STRANDED,TYPE E,WHT/BLK	IN	6.000		44
5430	66029		WIRE,TFE,22 AWG,STRANDED,TYPE E,YEL	IN	6.000		45
5440	12023		WASH,FLAT,B/ZN PLTG,.312 OD X .141 ID X .093 THK	EA	3.000	UNC\S-783-M01F05AG	46
5450	69171		ALLIGATOR STRIP,BLK,.052 TO .085 CHASSIS THKNESS	IN	A/R	PLM\CSG-09	47

BILL NO: 1007245-501 REV: B U/M: EA DRAWING NO:
HARNESS ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0010	1007248	E	WIRE LIST,PS	EA	REF	ARC-A\1007248	
0020	1007249-101	-	HARNESS BD,PS HARNESS	EA	REF		
1500	41071		CONN,SUBMINI"D",FILTD,25 PIN,(F)	EA	1.000	AMH\FCC17B25SM340	J3
2200	41182		CONN,PLUG,3 PIN,(F),18 AWG	EA	1.000	PNT\CT156F18-3	P4
2210	41059		CONN,THRU COVER,3 PIN	EA	1.000	PNT\TC156F-3-C	P4
2220	41075		CONN,PLUG,6 PIN,(F)	EA	2.000	PNT\CT156F22-6-C	P5 ,P6
2230	41060		CONN,THRU COVER,6 PIN	EA	2.000	PNT\TC156F-6-C	P5 ,P6
2240	41061		CONN,THRU COVER,10 PIN	EA	1.000	PNT\TC156F-10-L	P7
2250	41076		CONN,PLUG,10 PIN,(F)	EA	1.000	PNT\CT156F22-10-T	P7
5020	66021		WIRE,TFE,18 AWG,STRANDED,TYPE E,GRY	IN	A/R		3
5030	66171		WIRE,TFE,18 AWG,STRANDED,TYPE E,WHT	IN	A/R		4
5080	66186		WIRE,PVC,14 AWG,STANDED (50/30),GRN/YEL	IN	A/R		9
5100	66096		WIRE,SHLD,1 COND,22 AWG,19 STR,WH TFE TAPE JCKT.	IN	A/R		11
5110	66025		WIRE,TFE,22 AWG,STRANDED,TYPE E,BLK	IN	A/R		12
5120	66034		WIRE,TFE,22 AWG,STRANDED,TYPE E,WHT	IN	A/R		13
5130	66027		WIRE,TFE,22 AWG,STRANDED,TYPE E,RED	IN	A/R		14
5140	69162		CABLE TIES,7/8 MAX BUNDLE DIA,4 L	EA	A/R	DEN\08432	15
5150	66151		WIRE,TFE,26 AWG,TYPE E,SOLID,RED	IN	A/R		16

DCN	DATE	REV
REL	28MAR95	-
7940	17MAR95	A
8196	23JAN96	B
8357	28APR96	C



SHEET	1	2
REV	C	C

ITEM	QTY REQD.	PART NO.	DESCRIPTION	MARK	FIN	MATL
30		PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND
INCLUDE PLATING THICKNESS
ALL THREADS ARE UNIFIED NATIONAL
SCREW, CLASS 3
REMOVE ALL BURRS AND SHARP
EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	±.02	±.008
OVER 6 TO 24	±.03	±.010
OVER 24	±.08	±.015

ANGULAR DIMENSIONS ±2°

30W1000M
USED ON MODEL

DRAWN
W. BICKELMAN
DATE 8 NOV 94

CHKD
W. BICKELMAN
DATE 28 MAR 95

MECH
J. MAGINN
DATE 28 MAR 95

ELEC
J. BANKERT
DATE 28 MAR 95

AMPLIFIER RESEARCH

CONTROL PANEL ASSY

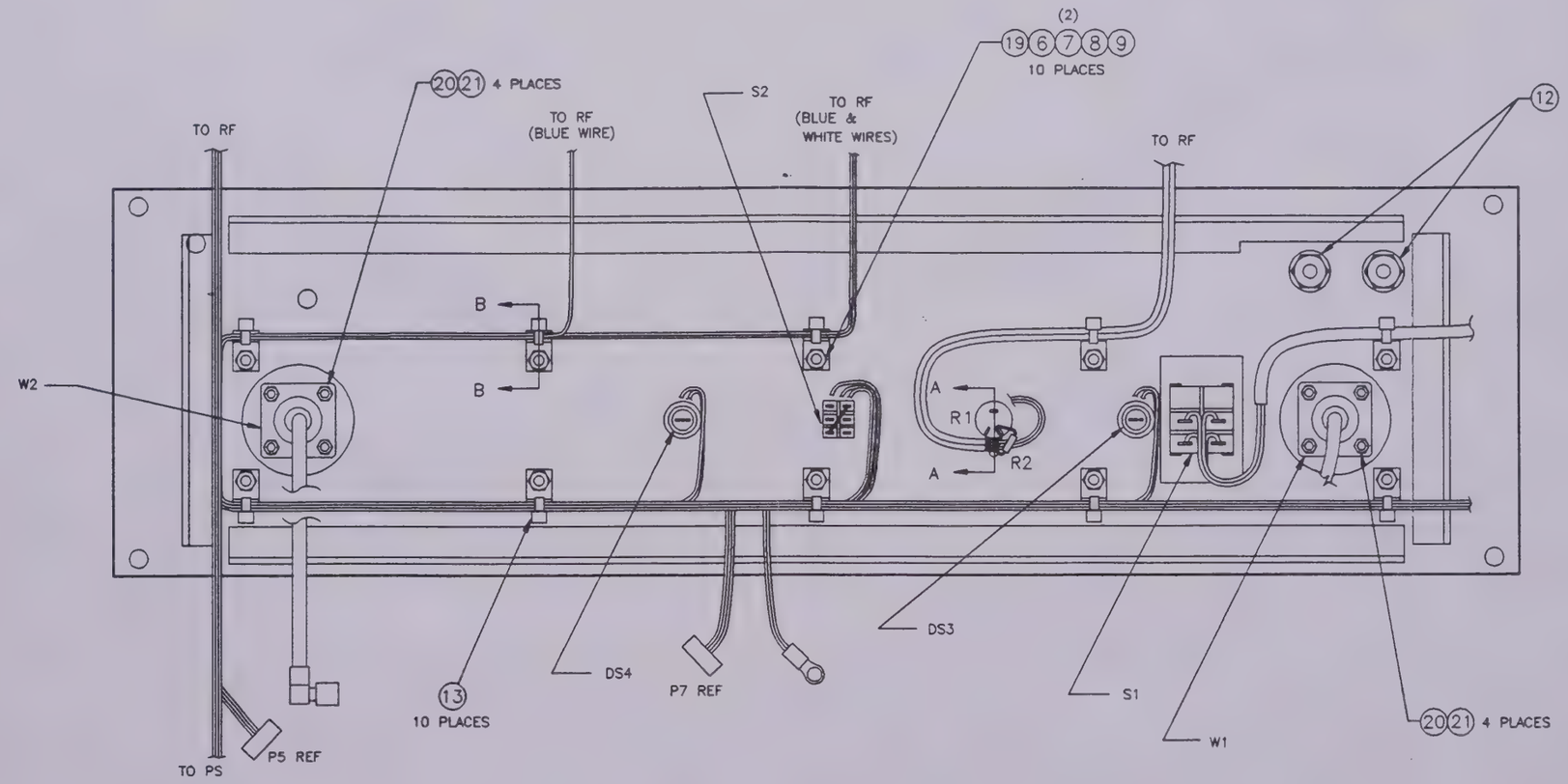
DWG. NO.
1007246

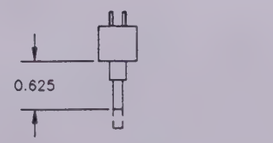
SCALE 1/1

SHEET 1 OF 2

REV SEE REV BLOCK

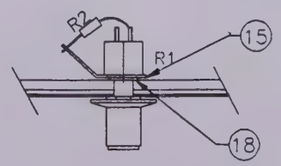
ECN REL	DATE	REV
		-
7940	11 NOV 03	A
8194	23 JAN 04	B
8357	29 MAR 04	C



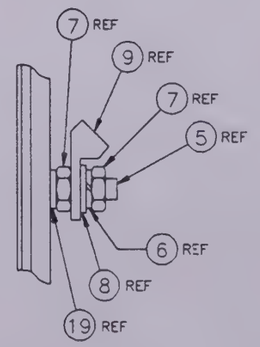


DETAIL OF R1

THE SHAFT OF R1 MUST BE TRIMMED IF IT IS GREATER THAN .625" FROM THE BASE OF THE THREADED SHOULDER. DO NOT TRIM TO LESS THAN .625".



SECTION A–A



SECTION B–B

SCALE 2:1
TYP 10 PLACES

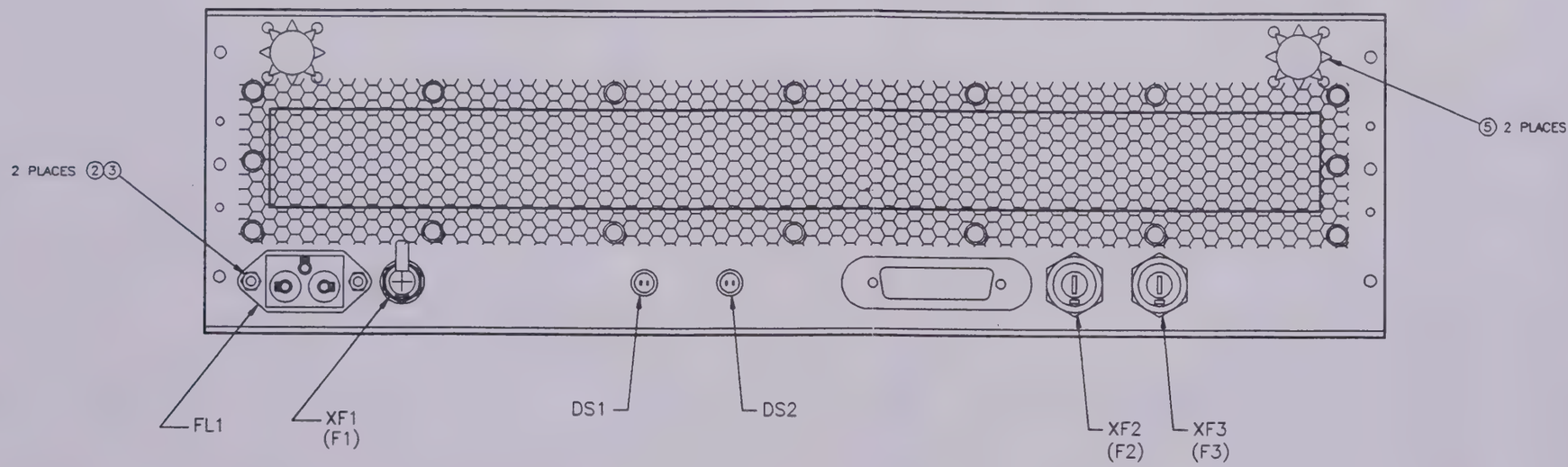
DWG. NO.	1007246	REV
SCALE 1/1	SHEET 2 OF 2	

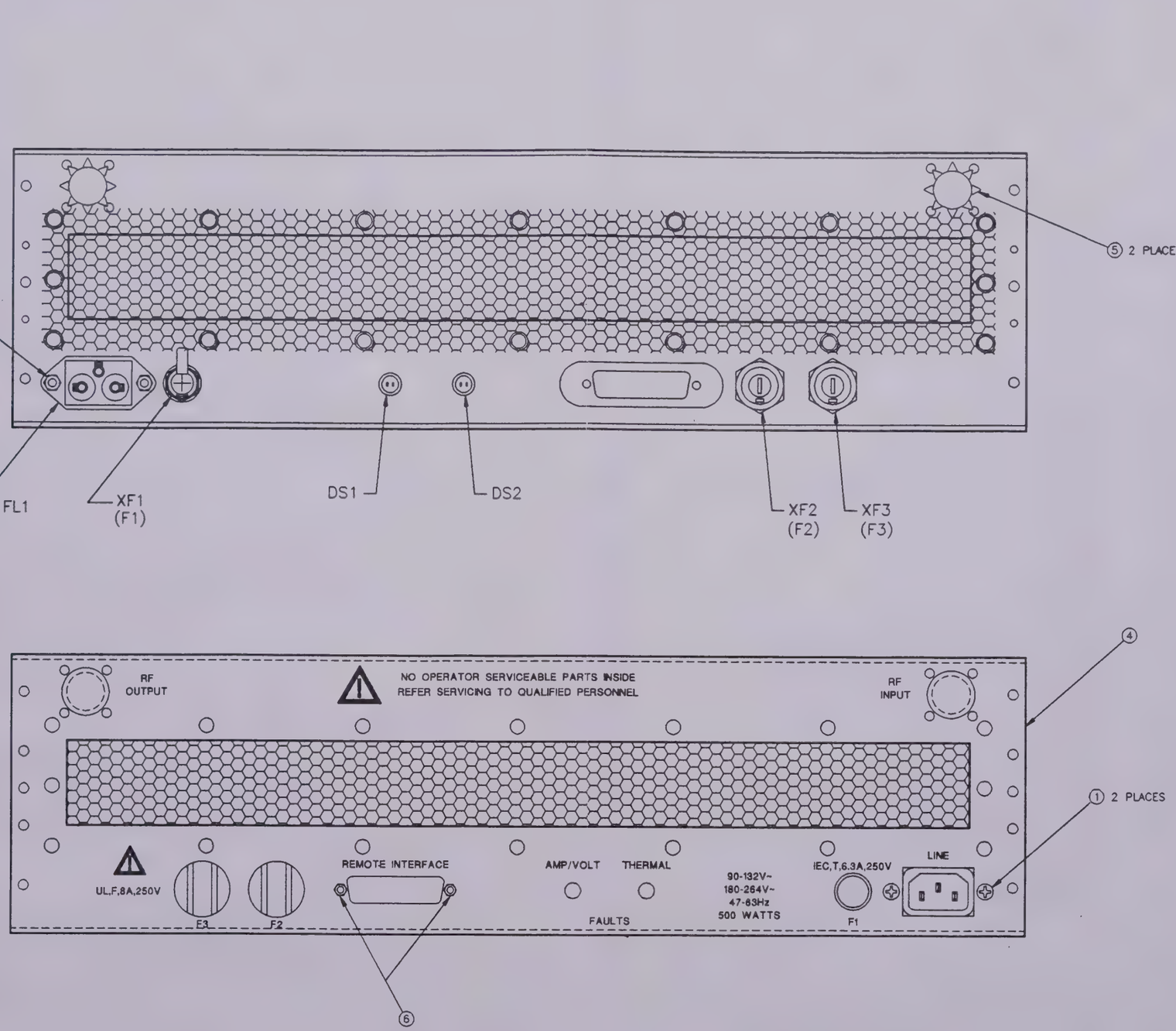
BILL NO: 1007246-501 REV: E U/M: EA DRAWING NO: ARC-D\1007246
CTRL PNL ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
1000	33010		LED,RED/GRN,T13/4(5MM)	EA	2.000	H-P\HLMP4000-009	DS3 .DS4
2700	55901	-	RES,VAR,CP,10K,10%,1/2W	EA	1.000	CLA\RV6NAYSA103A	R1
2710	55612-2001J		RES,FXD,METAL FILM,2.0K,5%,1/4-1/2W	EA	1.000	TRW\GP55-2001+/-5%	R2
3100	57085	-	SW,ROCKER,NON-LIGHTED,DPST,BLK	EA	1.000	CAR\RGSEC701RBB0	S1
3110	57042		SW,TOGGLE,MINI,DPDT,5A,125VAC	EA	1.000	A-S\MST-205N	S2
4200	20361	A	CABLE ASSY,COAX,RG-142B/U,N PNL,SMA,8.0"	EA	1.000	ARC-A\1002494	W1
4210	20401	-	CABLE ASSY,COAX,SEMI-RIGID,ALUM,N PNL,SMA,13.0"	EA	1.000	ARC-A\1002494	W2
5000	1007235-301-F1	D	PNL,CTRL	EA	1.000	ARC-D\1007235	1
5010	1007236-101-F2	A	CHANNEL,TRIM	EA	1.000	ARC-D\1007236	2
5020	1007237-101-F6-M1	-	PNL,TRIM	EA	1.000	ARC-D\1007237	3
5030	69241		TAPE,TRANSPARENT,ACRYLIC ADH,2 SIDES,.004 THK	IN A/R		CMP\M69	4
5040	11127		SCREW,MACH,FLT HD,100 DEG,CROSS-REC,S/S,6-32 X .62	EA	10.000		5
5050	12048		WASH,LOCK,SPLIT,S/S,#6	EA	10.000	\MS35338-136	6
5060	13004		NUT,HEX,S/S,6-32,.250AF	EA	20.000		7
5070	12011		WASH,FLAT,S/S,#6,.312 OD X .156 ID X .035 THK	EA	10.000	\MS15795-805	8
5080	69175		MTG TAB,NAT'L COLOR NYLON,21/32 O/A,3/8 W	EA	10.000	PLM\A-30-167	9
5090	77067		ADH,CLEAR,RTV,1 TOUCH	OZ A/R		G-E\GE108	10
5100	1006658-101		LOGO,DIECAST,1.00	EA	1.000	ARC-B\1006658	11
5110	14048	-	FASTENER,PALNUT,WASH TYPE,SELF THDG,.125 DIA	EA	2.000	MCS\90533A131	12
5120	69161		CABLE TIES,1 3/8 MAX BUNDLE DIA,5 5/8 L	EA A/R		PNT\PLT1.5MP	13
5130	69018		KNOB,SKIRTED,1/8"SHAFT,MATTE FINISH	EA	1.000	ROG\MF-RB-67-0SK7M	14
5140	69242		LUG,SHAKEPROOF,13/16 L,#1/4 STUD,DUAL HOLE	EA	1.000	HHS\1410-14	15
5170	12060		WASH,LOCK,EXT TOOTH,S/S,#1/4	EA	1.000	\MS35335-61	18
5180	12001		WASH,LOCK,INT TOOTH,S/S,#6	EA	10.000	\MS35333-71	19

BILL NO: 1007246-501 REV: E U/M: EA DRAWING NO: ARC-D\1007246
CTRL PNL ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
5190	13003		NUT,HEX,S/S,4-40,.187AF	EA	8.000		20
5200	12047		WASH,LOCK,SPLIT,S/S,#4	EA	8.000	\MS35338-135	21





FOR BOM SEE 1007247-501

QTY. REQD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	±.02	±.008
ABOVE 6 TO 24	±.03	±.010
ABOVE 24	±.06	±.015

ANGULAR DIMENSIONS 1/2°

30W1000M7
USED ON MODEL

DRAWN M. BICKELMAN DATE 4 NOV 94
CHKD M. BICKELMAN DATE 28 MAR 95
MECH J. MACMIN DATE 28 MAR 95
ENGR J. BANKERT DATE 28 MAR 95

AMPLIFIER RESEARCH

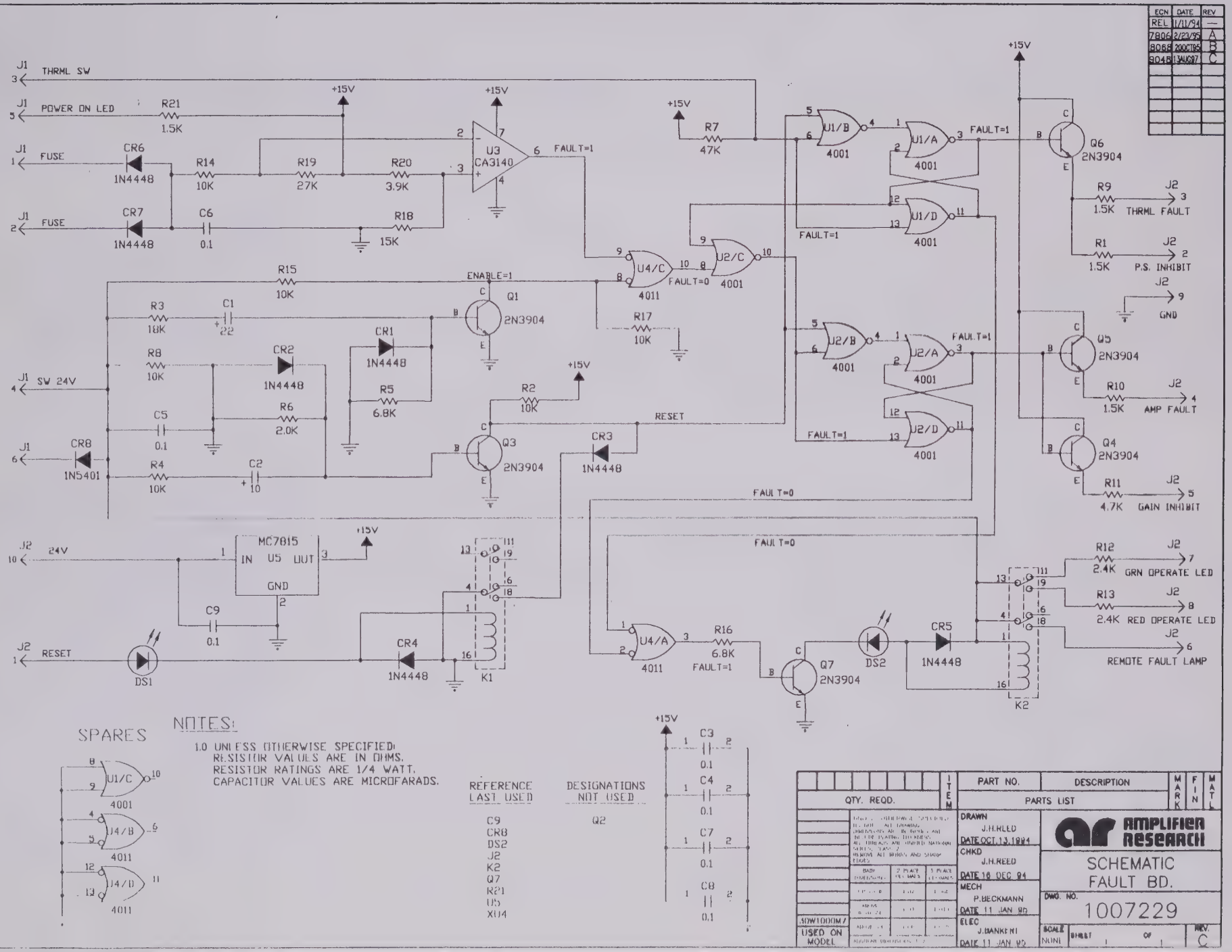
REAR PANEL ASSY

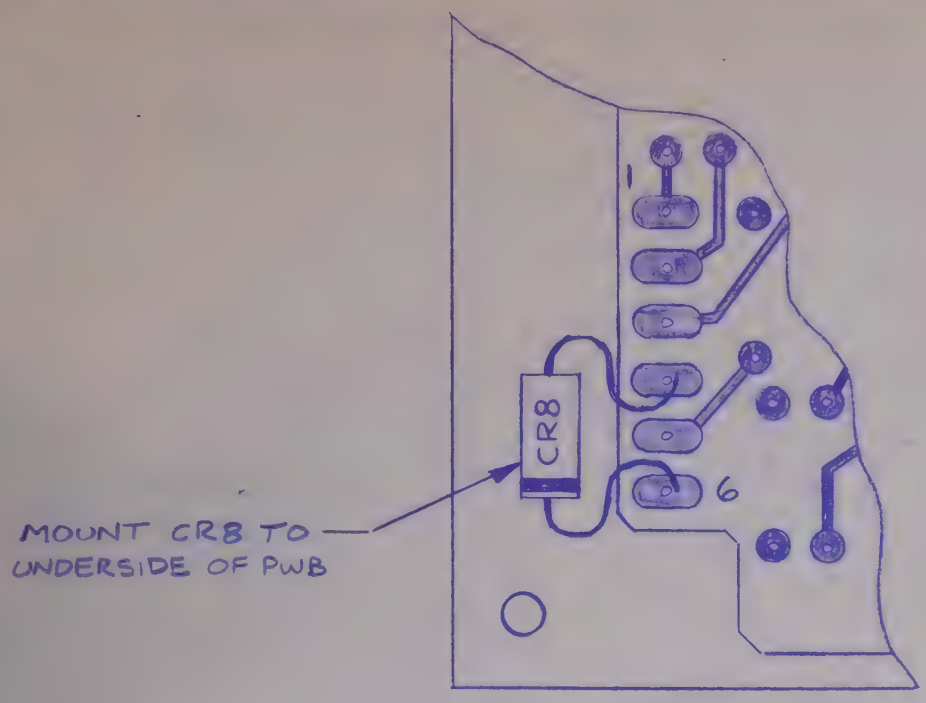
DWG. NO. 1007247

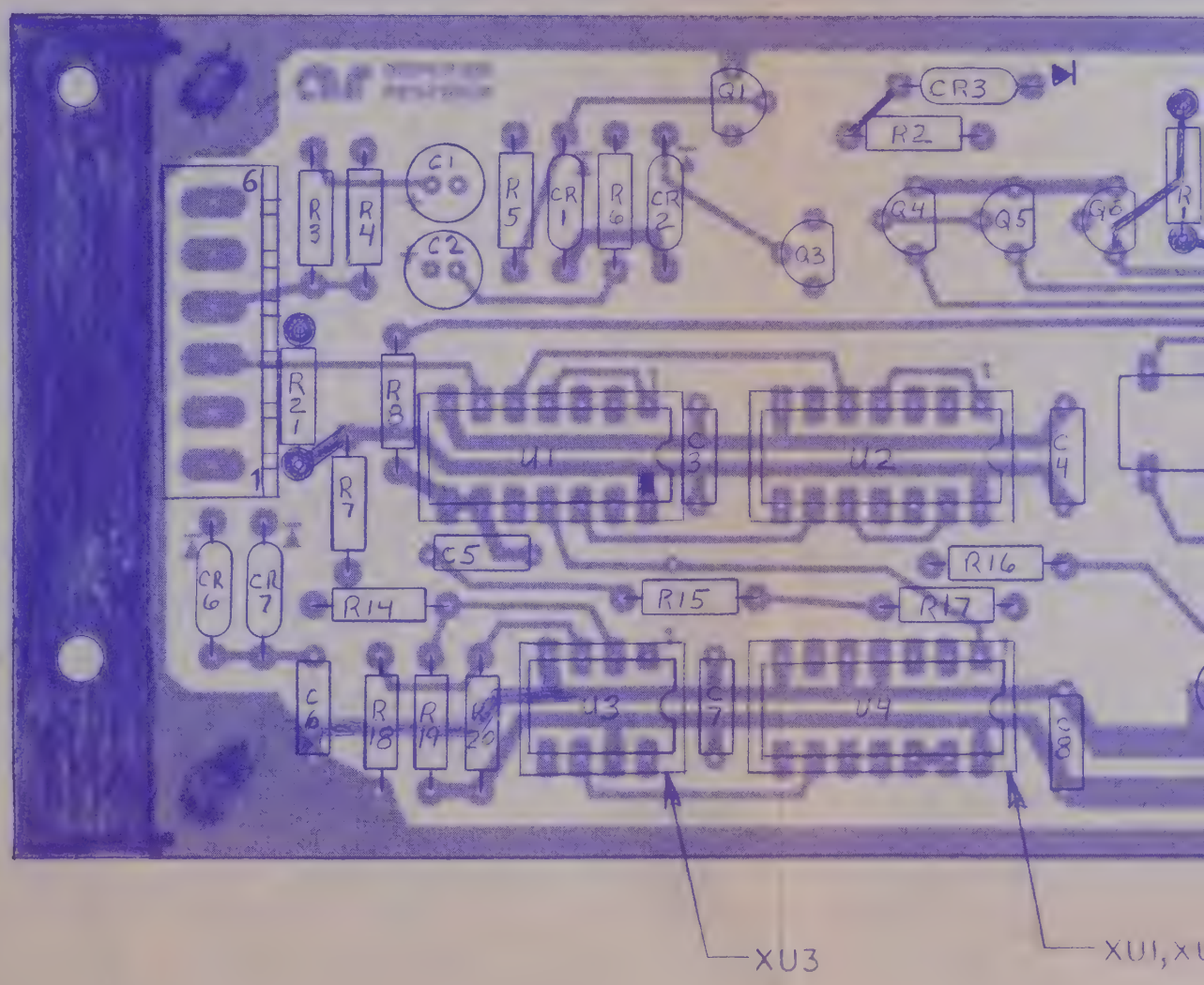
SCALE 1/1 SHEET 1 OF 1 REV. —

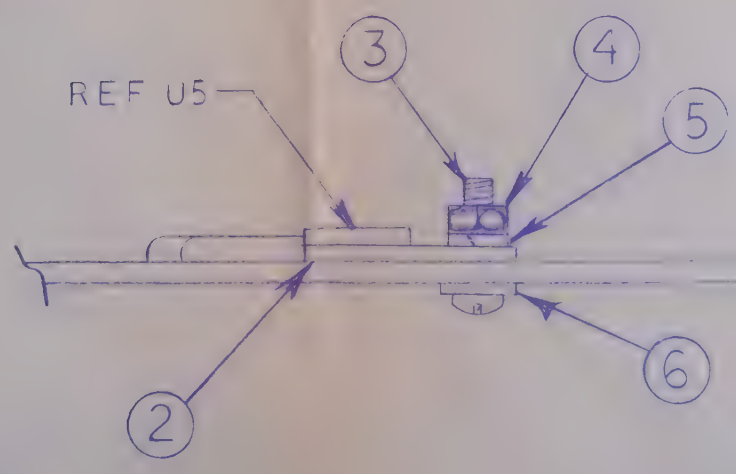
BILL NO: 1007247-501 REV: B U/M: EA DRAWING NO: ARC-D\1007247
REAR PNL ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
1000	33003		LED,RED,T1 3/4(5mm)	EA	2.000	H-P\HLMP-3001-009	DS1 ,DS2
1300	35082		FUSE,SLO BLO,TYPE T,METRIC,6.3A,250V	EA	1.000	LIF\21806.3	F1
1310	35069		FUSE,FAST-ACTING,3AG GLASS BODY,8A,250V	EA	2.000	LIF\312008	F2 ,F3
1400	35019		FILT,LINE,6 AMP	EA	1.000	COR\6EF1	FL1
4500	73029		FUSEHOLDER,PNL MNT,5X20mm,UL 20A/300V,VDE 10/250V	EA	1.000	LIF\345623	XF1
4510	73022		FUSEHOLDER,BLO-FUSE INDICATING,PNL MOUNT	EA	2.000	LIF\344024	XF2 ,XF3
5000	11020		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X .50	EA	2.000	\MS51957-30	1
5010	12048		WASH,LOCK,SPLIT,S/S,#6	EA	2.000	\MS35338-136	2
5020	13004		NUT,HEX,S/S,6-32,.250AF	EA	2.000		3
5030	1007238-301-M1	B	PNL,REAR	EA	1.000	ARC-D\1007238	4
5040	69111		PLUG,HOLE,METAL,5/8"DIA HOLE,13/16"O/A DIA	EA	2.000	HHS\654	5
5050	69262		SCREWLOCK,F,"D" CONN	EA	1.000	AMP\207952-1	6

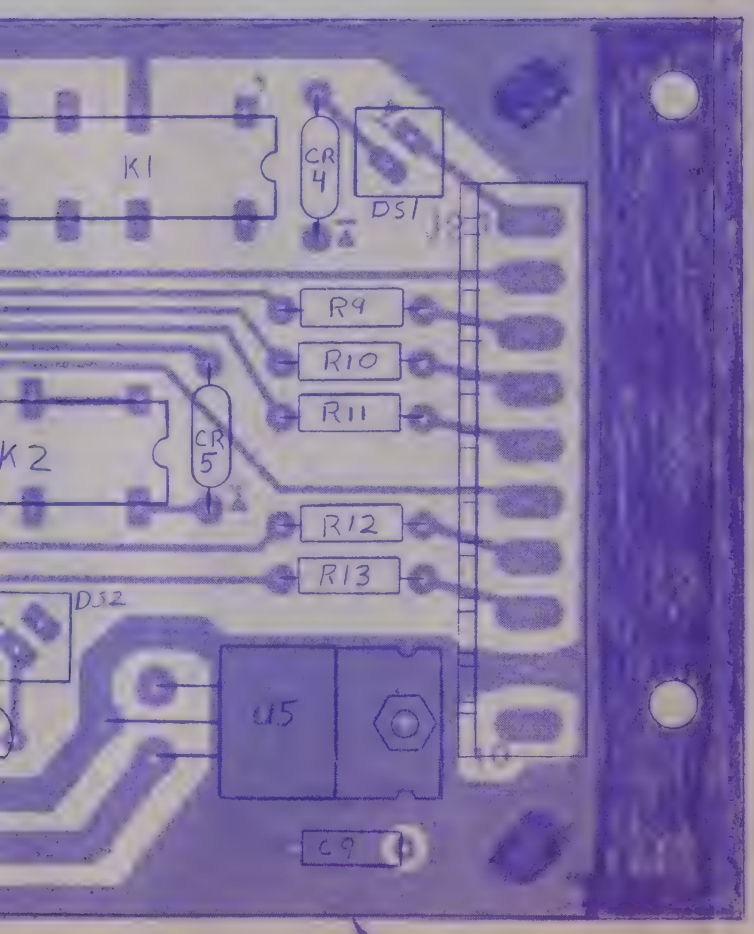

ECN DATE REV
REL 1/11/94 —
7806 2/23/95 A
8068 2OCT95 B
9045 13AUG97 C
J1 THRML SW
J1 POWER ON LED
R21 1.5K
J1 FUSE
CR6 1N4448
R14 10K
R19 27K
R20 3.9K
J1 FUSE
CR7 1N4448
C6 0.1
R18 15K
U3 CA3140
FAULT=1
+15V
R7 47K
U1/B 4001
U1/A 4001
U1/D 4001
U2/C 4001
U4/C 4011
FAULT=0
ENABLE=1
R15 10K
R3 18K
C1 22
Q1 2N3904
R17 10K
CR1 1N4448
R8 10K
CR2 1N4448
R5 6.8K
R6 2.0K
J1 SW 24V
C5 0.1
J1
CR8 1N5401
R4 10K
C2 10
R2 10K
Q3 2N3904
CR3 1N4448
RESET
U2/B 4001
U2/A 4001
U2/D 4001
Q6 2N3904
R9 1.5K
J2 3 THRML FAULT
R1 1.5K
J2 2 P.S. INHIBIT
J2 9 GND
Q5 2N3904
R10 1.5K
J2 4 AMP FAULT
Q4 2N3904
R11 4.7K
J2 5 GAIN INHIBIT
J2 10 24V
MC7815 IN U5 OUT GND
C9 0.1
J2 RESET
DS1
CR4 1N4448
K1
U4/A 4011
R16 6.8K
Q7 2N3904
DS2
CR5 1N4448
K2
R12 2.4K
J2 7 GRN OPERATE LED
R13 2.4K
J2 8 RED OPERATE LED
J2 6 REMOTE FAULT LAMP
SPARES
U1/C 4001
U4/B 4011
U4/D 4011
NOTES:
1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE IN OHMS.
RESISTOR RATINGS ARE 1/4 WATT.
CAPACITOR VALUES ARE MICROFARADS.
REFERENCE LAST USED
C9
CR8
DS2
J2
K2
Q7
R21
U5
X04
DESIGNATIONS NOT USED
Q2
C3 0.1
C4 0.1
C7 0.1
C8 0.1
ITEM
QTY. REQD.
PART NO.
DESCRIPTION
PARTS LIST
MARK
FIN
MATL
DRAWN J.H.REED DATE OCT.13.1994
CHKD J.H.REED DATE 16 DEC 94
MECH P.BECKMANN DATE 11 JAN 95
ELEC J.BANKERT DATE 11 JAN 95
AMPLIFIER RESEARCH
SCHEMATIC FAULT BD.
DWG. NO. 1007229
SCALE NONE
SHEET 1 OF 1
REV. C
50W1000M/
USED ON MODEL


MOUNT CR8 TO
UNDERSIDE OF PWB
CR8
1
6


Q1
CR3
R2
C1
C2
R3
R4
R5
CR1
R6
CR2
Q3
Q4
Q5
Q6
R1
R21
R8
R7
U1
U2
C3
C4
C5
R16
R15
R17
R14
CR6
CR7
C6
R18
R19
R20
U3
U4
C7
C8
XU3
XU1,XU


REF U5
3
4
5
2
6

ECN	DATE	REV
REL	17DEC94	A
8116	[illegible]	B



XU4

(1)

(1)

FOR BOM SEE 1007227-501

PART NO.	DESCRIPTION	MARK	FIN	MATL
BILL OF MATERIAL				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	± .02	± .005
ABOVE 6 TO 24	± .03	± .010
ABOVE 24	± .06	± .015
ANGULAR DIMENSIONS ½°		

30W1000M7
USED ON MODEL

DRAWN J. H. Reed DATE 4 OCT. 94
CHKD J. H. Reed DATE 9 SEP 94
MECH J. McGinnis DATE 1/5/95
ELEC [signature] DATE 1-5-95

AMPLIFIER RESEARCH

ASSEMBLY, PWB
FAULT BOARD

1007227

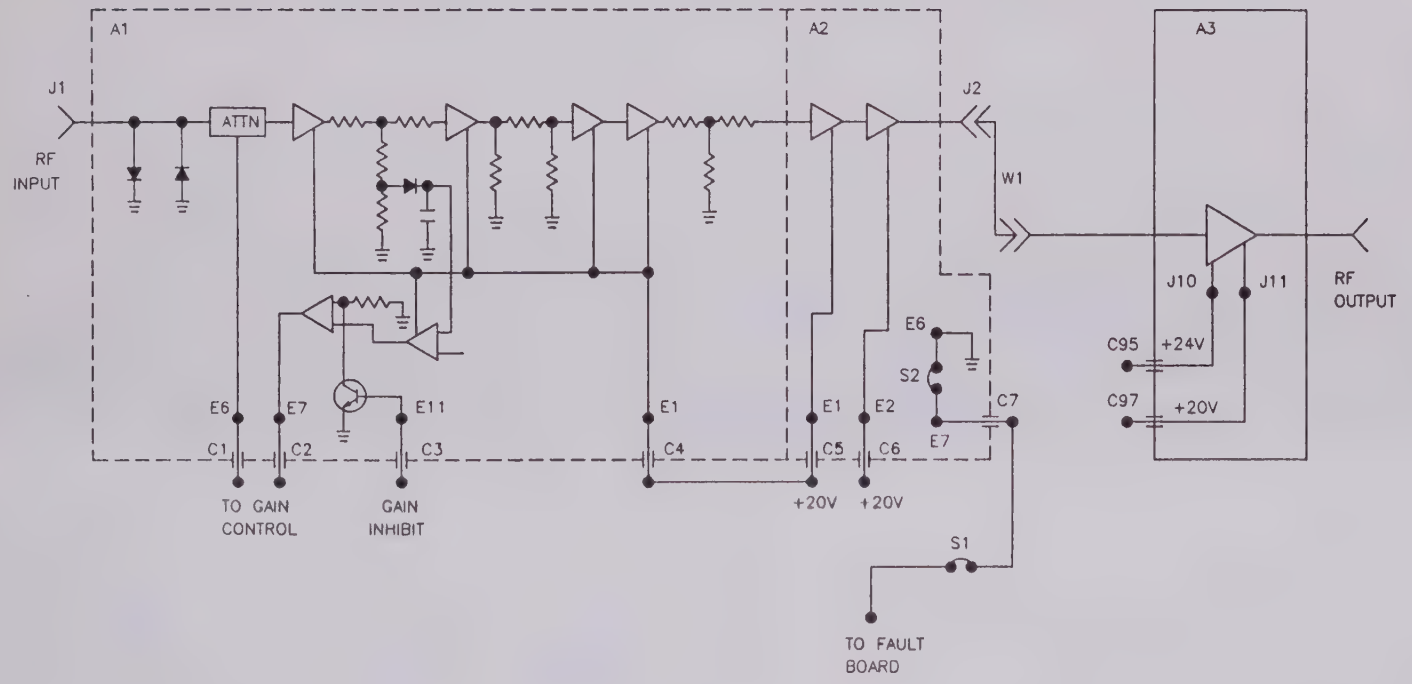
SCALE 2:1 SHEET 1 OF 1 REV B

BILL NO: 1007227-501 REV: C U/M: EA DRAWING NO: ARC-C\1007227
PWB ASSY,FAULT BD

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0010	1007229	C	SCHEM DIAG,FAULT BD	EA	REF	ARC-C\1007229	
0400	27061		CAPR,ELECT,22uF,50V,RADIAL	EA	1.000	ICI\226RMR050M	C1
0410	27059		CAPR,ELECT,10uF,50V,+/-20%,RADIAL	EA	1.000	PAN\ECEA1HU100	C2
0420	27236		CAPR,FXD,DIP SPACED CER,.1UF,50VDC	EA	7.000	AVX\MD015C104MAA	C3 ,C4 C5 ,C6 C7 ,C8 C9
0700	1N4448		DIODE,SIGNAL,75V PIV	EA	7.000	FCH\1N4448	CR1 ,CR2 CR3 ,CR4 CR5 ,CR6 CR7
0710	1N5401		DIODE,3A,100V PIV	EA	1.000	SSM\1N5401	CR8
1010	33005		LED,GRN,T1 3/4(5mm)	EA	2.000	H-P\HLMP-3507-009	DS1 ,DS2
1500	41083		CONN,LOCKING HEADER,STR,6 PIN	EA	1.000	PNT\MLSS156-6-C	J1
1510	41084		CONN,LOCKING HEADER,STR,10 PIN,SQR POSTS	EA	1.000	PNT\MLSS156-10-L	J2
1700	1001783-101	C	RELAY,LO-PWR,DPDT,24VDC,POS.NO.1 PIN,FORM C	EA	2.000	ARC\1001783	K1 ,K2
2500	2N3904		XSTR,SWNG,NPN,40V,0.2A,1W	EA	6.000		Q1 ,Q3 Q4 ,Q5 Q6 ,Q7
2700	55612-1501J		RES,FXD,METAL FILM,1.5K,5%,1/4-1/2W	EA	4.000	TRW\GP55-1501+/-5%	R1 ,R9 R10 ,R21
2710	55612-1002J		RES,FXD,METAL FILM,10K,5%,1/4-1/2W	EA	5.000	TRW\GP55-1002+/-5%	R2 ,R4 R8 ,R15 R17
2720	55612-1802J		RES,FXD,METAL FILM,18K,5%,1/4-1/2W	EA	1.000	TRW\GP55-1802+/-5%	R3
2730	55612-6801J		RES,FXD,METAL FILM,6.8K,5%,1/4-1/2W	EA	2.000	TRW\GP55-6801+/-5%	R5 ,R16
2740	55612-2001J		RES,FXD,METAL FILM,2.0K,5%,1/4-1/2W	EA	1.000	TRW\GP55-2001+/-5%	R6
2750	55612-4702J		RES,FXD,METAL FILM,47K,5%,1/4-1/2W	EA	1.000	TRW\GP55-4702+/-5%	R7
2770	55612-4701J		RES,FXD,METAL FILM,4.7K,5%,1/4-1/2W	EA	1.000	TRW\GP55-4701+/-5%	R11
2780	55612-2401J		RES,FXD,METAL FILM,2.4K,5%,1/4-/12W	EA	2.000	TRW\GP55-2401+/-5%	R12 ,R13

BILL NO: 1007227-501 REV: C U/M: EA DRAWING NO: ARC-C\1007227
PWB ASSY,FAULT BD

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
2790	55612-1001J		RES,FXD,METAL FILM,1K,5%,1/4-1/2W	EA	1.000	TRW\GP55-1001+/-5%	R14
2800	55612-1502J		RES,FXD,METAL FILM,15K,5%,1/4-1/2W	EA	1.000	TRW\GP55-1502+/-5%	R18
2810	55612-2702J		RES,FXD,METAL FILM,27K,5%,1/4-1/2W	EA	1.000	TRW\GP55-2702+/-5%	R19
2820	55612-3901J		RES,FXD,METAL FILM,3.9K,5%,1/4-1/2W	EA	1.000	TRW\GP55-3901+/-5%	R20
3700	60052		INTEGRATED CKT,QUAD 2-INPUT NOR GATE	EA	2.000	MOT\MC4001BCP	U1 ,U2
3710	60009		INTEGRATED CKT,LINEAR,OP.AMP.	EA	1.000	RCA\CA3140AE	U3
3720	60041		IC,CMOS,QUAD 2 INPUT NAND GATE	EA	1.000	MOT\MC14011BCP	U4
3730	60046		INTEGRATED CKT,3 TERM,POS REG.	EA	1.000	MOT\MC7815CT	U5
4500	73013		SOCKET,I.C..14 PIN	EA	3.000	TII\C93-14-02	XU1 ,XU2 XU4
4510	73010		SOCKET,I.C..8 PIN,DIP	EA	1.000	TII\C93-08-02	XU3
5000	1007228-101	A	PWB,FAULT	EA	1.000	ARC-C\1007228	1
5010	77064		COMPOUND,THERMAL JOINT,TYPE 120	OZ	A/R	WAK\120-S	2
5020	11011		SCREW,MACH,PAN HD,CROSS-REC,S/S,4-40 X .38	EA	1.000	\MS51957-15	3
5030	13003		NUT,HEX,S/S,4-40,.187AF	EA	1.000		4
5040	12047		WASH,LOCK,SPLIT,S/S,#4	EA	1.000	\MS35338-135	5
5050	12010		WASH,FLAT,S/S,#4,.250 OD X .125 ID X .022 THK	EA	1.000	\MS15795-803	6



ECN	DATE	REV
—	4JAN95	—
7928	15AUG95	A
8088	2NOV95	B
8434	23MAY96	C

ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
QTY. REQD.	PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	± .02	± .005
ABOVE 6 TO 24	± .03	± .010
ABOVE 24	± .06	± .015

ANGULAR DIMENSIONS 1/2°

30W1000M7
USED ON MODEL

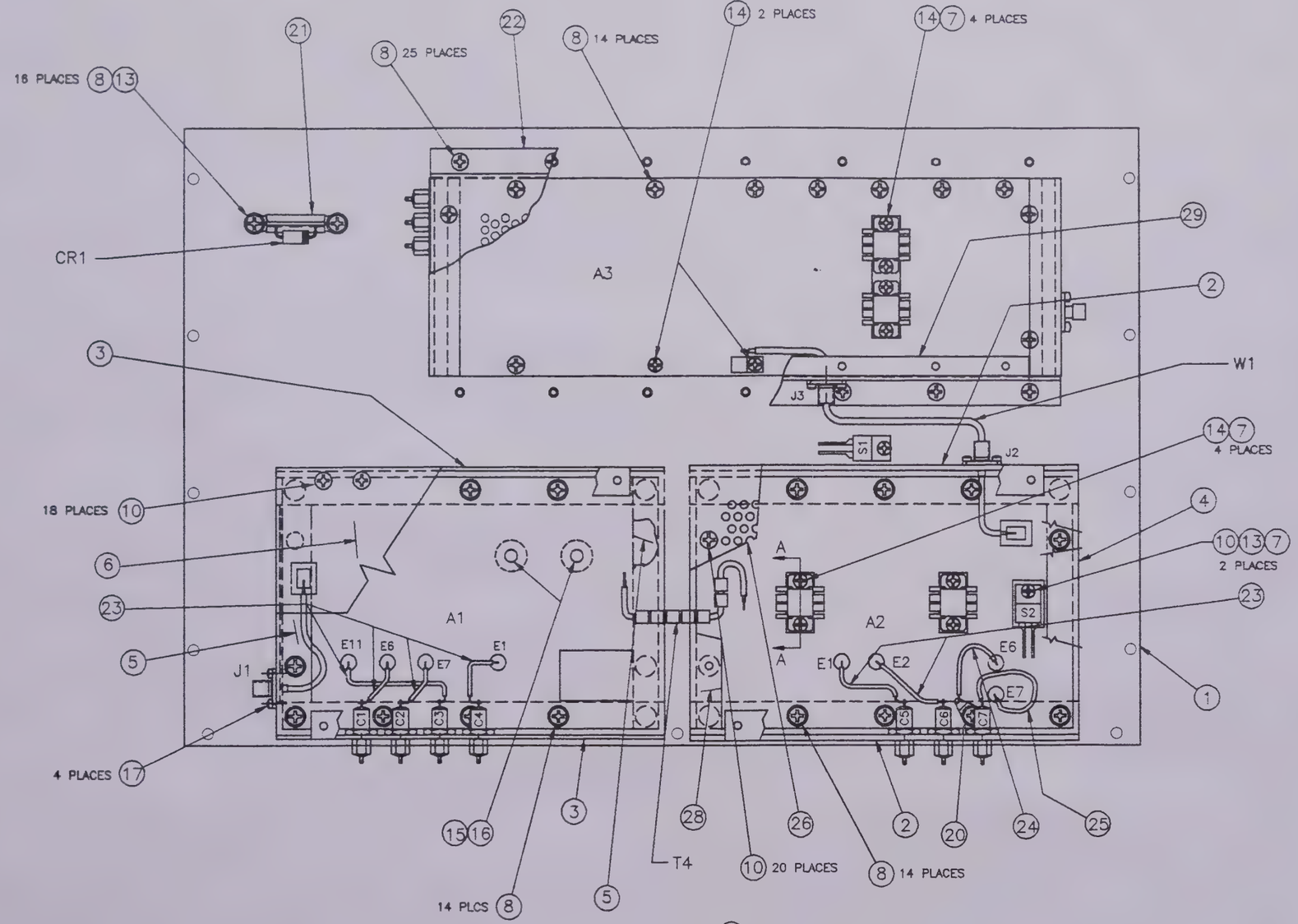
DRAWN M. BICKELMAN DATE 15 NOV 94
CHKD G. JACKSON DATE 15 NOV 94
MECH J. MAGINN DATE 15 NOV 94
ELEC J. BANKERT DATE 15 NOV 94

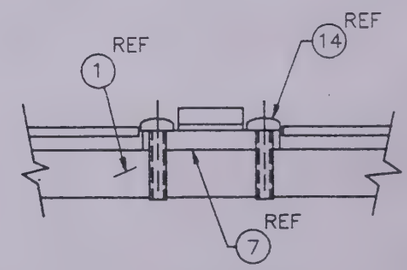
AMPLIFIER RESEARCH

BLOCK DIAG
RF AMP

DWG. NO. 1007275

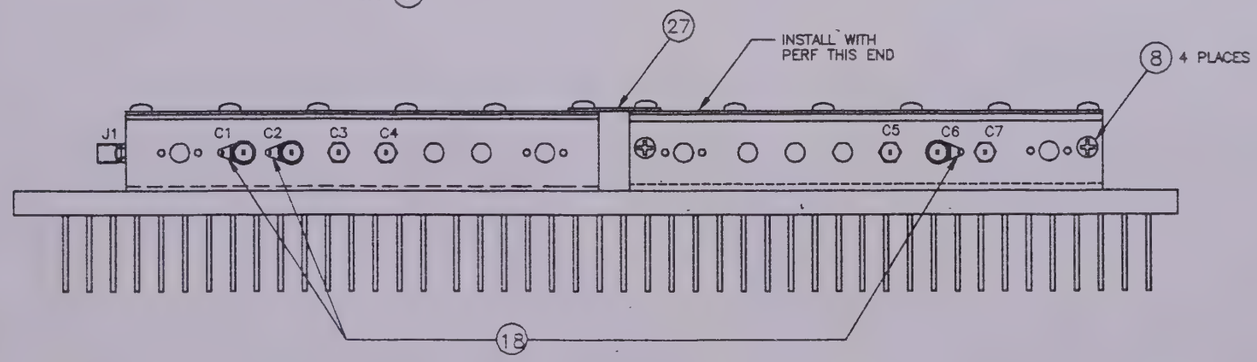
SCALE NONE | SHEET 1 OF 1 | REV. C





SECTION A–A

TYP 4 PLACES SCALE 2:1



FOR BOM SEE 1008091-501

QTY. REQD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 2 REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	±.02	±.005
ABOVE 6 TO 24	±.03	±.010
ABOVE 24	±.06	±.015

ANGULAR DIMENSIONS ±1°

25W1000A USED ON MODEL

DRAWN W. BICKELMAN DATE 7 JUNE 96

CHKD W. BICKELMAN DATE 7 JUNE 96

MECH DATE

ELEC DATE

APPROVED

APPROVED

APPROVED

AMPLIFIER RESEARCH

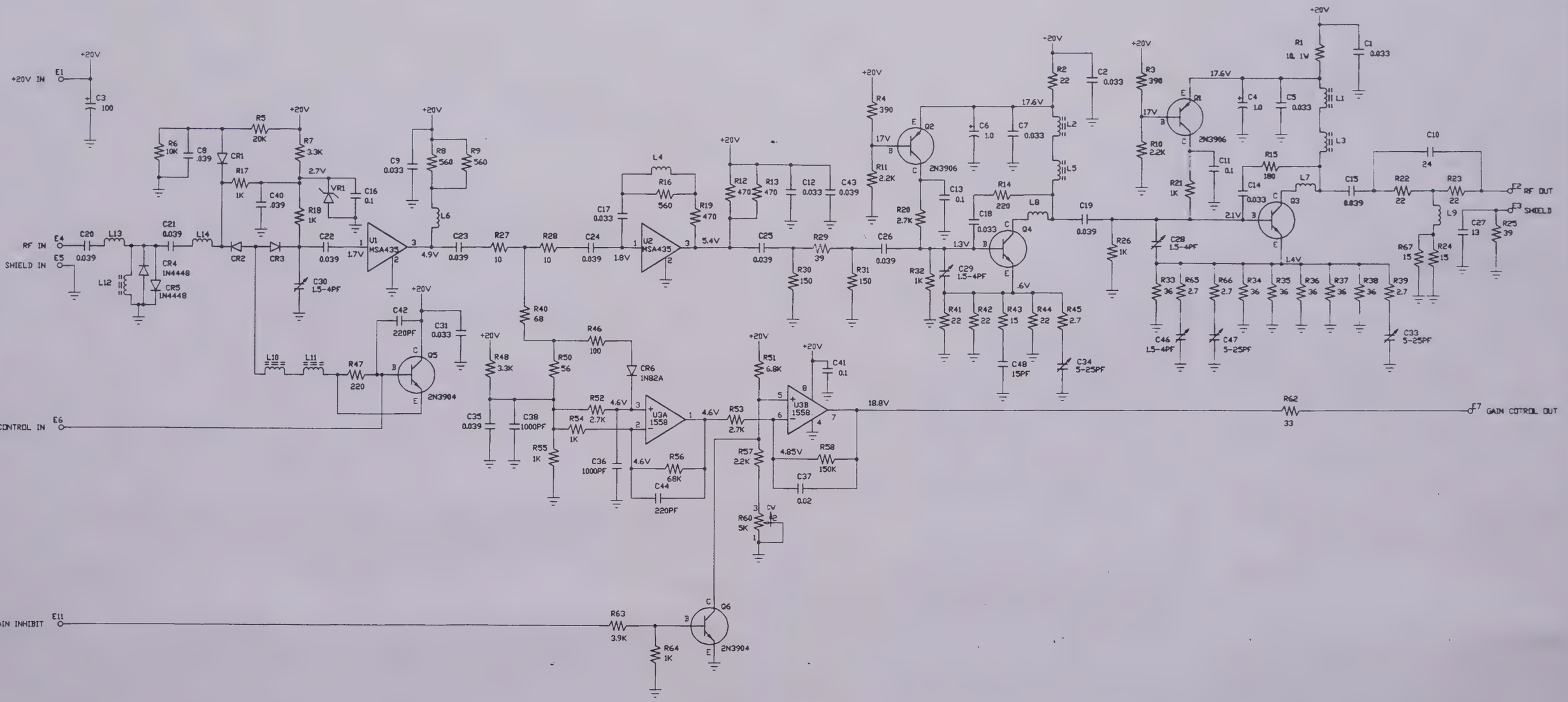
14:26:18 26 NOV 1997 * * * SINGLE LEVEL BILL OF MATERIAL LISTING * * * REPORT: E0056 PAGE: 1

BILL NO: 1008091-501 REV: B U/M: EA DRAWING NO: ARC-D\1008091
RF ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0010	1007275	C	BLOCK DIAG,RF AMPL	EA	REF	ARC-B\1007275	
0100	1008093-501	-	PWB ASSY,DRIVER W/INPUT LEVELING	EA	1.000	ARC-C\1008093	A1
0110	1008095-501	A	PWB ASSY,10 WATT AMP	EA	1.000	ARC-C\1008095	A2
0120	1008096-501	A	COMPNT KIT,PWB ASSY,10 WATT AMP	EA	1.000		A2
0130	1008101-501	C	PWB ASSY,WC SERIES MODULE	EA	1.000	ARC-D\1008101	A3
0400	27100		CAPR,FEED-THRU,FILT,.004UF,500V	EA	7.000	TXS\FR3-50	C1 ,C2 C3 ,C4 C5 ,C6 C7
0700	1N5401		DIODE,3A,100V PIV	EA	1.000	SSM\1N5401	CR1
1500	20522	-	CABLE ASSY,COAX,SEMI-RIGID,SMA PNL,2.7	EA	1.000	ARC-A\1002494	J1
1510	20334	-	CABLE ASSY,COAX,SEMI-RIGID,SMA PNL,2.1	EA	1.000	ARC-A\1002494	J2
1520	1004451-504	C	CABLE ASSY,COAX,SEMI-RIGID,ALUM,SMA BLKHD	EA	1.000	ARC-B\1004451	J3
3100	57062		SW,TEMP SENSING,N.C.,OPEN AT 70C	EA	2.000	AIR\67L070	S1 ,S2
4200	20443	-	CABLE ASSY,COAX,SEMI-RIGID,ALUM,SMA,SMA,3.8"	EA	1.000	ARC-A\1002494	W1
5000	1008279-301	-	HEATSINK	EA	1.000	ARC-D\1008279	1
5010	1008277-101	A	SHIELD,SIDE,.090	EA	2.000	ARC-C\1008277	2
5020	1008276-101	-	SHIELD,SIDE,.060	EA	2.000	ARC-C\1008276	3
5030	1008025-101	A	SHLD,END,.090	EA	1.000	ARC-B\1008025	4
5040	1006572-101	C	SHLD,END,.060	EA	2.000	ARC-B\1006572	5
5050	1008278-101	-	SHIELD,TOP	EA	1.000	ARC-B\1008278	6
5060	77064		COMPOUND,THERMAL JOINT,TYPE 120	OZ	A/R	WAK\120-S	7
5070	11018		SCREW,MACH,PAN HD,CROSS-REC,ZN,6-32 X .38,TYPE SW	EA	68.000		8
5080	12023		WASH,FLAT,B/ZN PLTG,.312 OD X .141 ID X .093 THK	EA	64.000	UNC\S-783-M01F05AG	9
5090	11014		SCREW,MACH,PAN HD,CROSS-REC,S/S,6-32 X .25	EA	38.000	\MS51957-26	10
5120	12048		WASH,LOCK,SPLIT,S/S,#6	EA	6.000	\MS35338-136	13

BILL NO: 1008091-501 REV: B U/M: EA DRAWING NO: ARC-D\1008091
RF ASSY

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
5130	11011		SCREW,MACH,PAN HD,CROSS-REC,S/S,4-40 X .38	EA	16.000	\MS51957-15	14
5140	13005		NUT,HEX,S/S,8-32,.250AF	EA	2.000		15
5150	12049		WASH,LOCK,SPLIT,S/S,#8	EA	2.000	\MS35338-137	16
5160	11008		SCREW,MACH FIL HD,SLOTTED,S/S,3-56 X .25	EA	4.000	PCI\AN501-D3-4	17
5170	69235		LUG,SOLDER 1/4 MTG HOLE	EA	3.000	STM\5413-1	18
5190	69100		LUG,SHAKEPROOF,BENT,41/64 L,#6 STUD,DUAL HOLE	EA	1.000	HHS\1416-6	20
5200	53005		TERM STRIP,3 TERMINAL	EA	1.000	SPC\LTS-203	21
5210	1008097-301	-	SHLD,TOP	EA	1.000	ARC-C\1008097	22
5220	66034		WIRE,TFE,22 AWG,STRANDED,TYPE E,WHT	IN	A/R		23
5230	66025		WIRE,TFE,22 AWG,STRANDED,TYPE E,BLK	IN	A/R		24
5240	66032		WIRE,TFE,22 AWG,STRANDED,TYPE E,VIO	IN	A/R		25
5250	1008280-101	-	SHIELD,TOP	EA	1.000	ARC-B\1008280	26
5260	1008281-101	-	SHIELD,JOINT	EA	1.000	ARC-B\1008281	27
5270	1007963-101	A	SHIELD,END,.90	EA	1.000	ARC-B\1007963	28
5280	1008098-101	A	SHLD,SIDE	EA	1.000	ARC-C\1008098	29



NOTES:

1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS.
RESISTOR RATINGS ARE 1/4 WATT.
CAPACITOR VALUES ARE MICROFARADS.

REFERENCE LAST USED	DESIGNATIONS NOT USED
C48	C39, C45
E10	E8,E9,E10
L14	R59,R61
Q6	XU1,XU2
R67	
U3	
VR1	
XU3	

ITEM	QTY. REQD.	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS
ALL THREADS ARE ANSI B1.1
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	±.02	±.005
ABOVE 6 TO 24	±.03	±.005
ABOVE 24	±.05	±.010
ANGULAR DIMENSIONS ±1°		

DRAWN M. BICKELMAN DATE 20 MAY 96
CHK'D DATE
MECH DATE
ELEC DATE

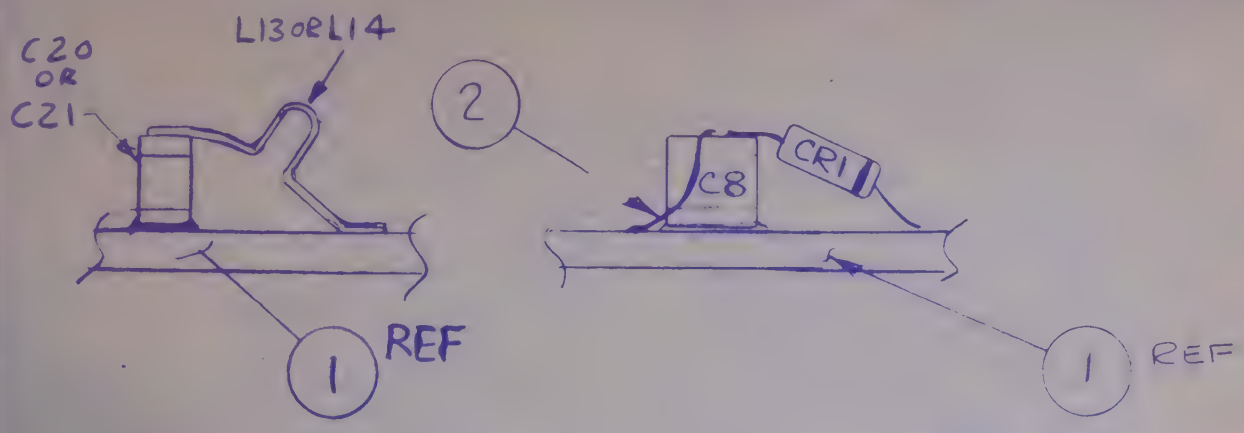
25W1000A
USED ON MODEL

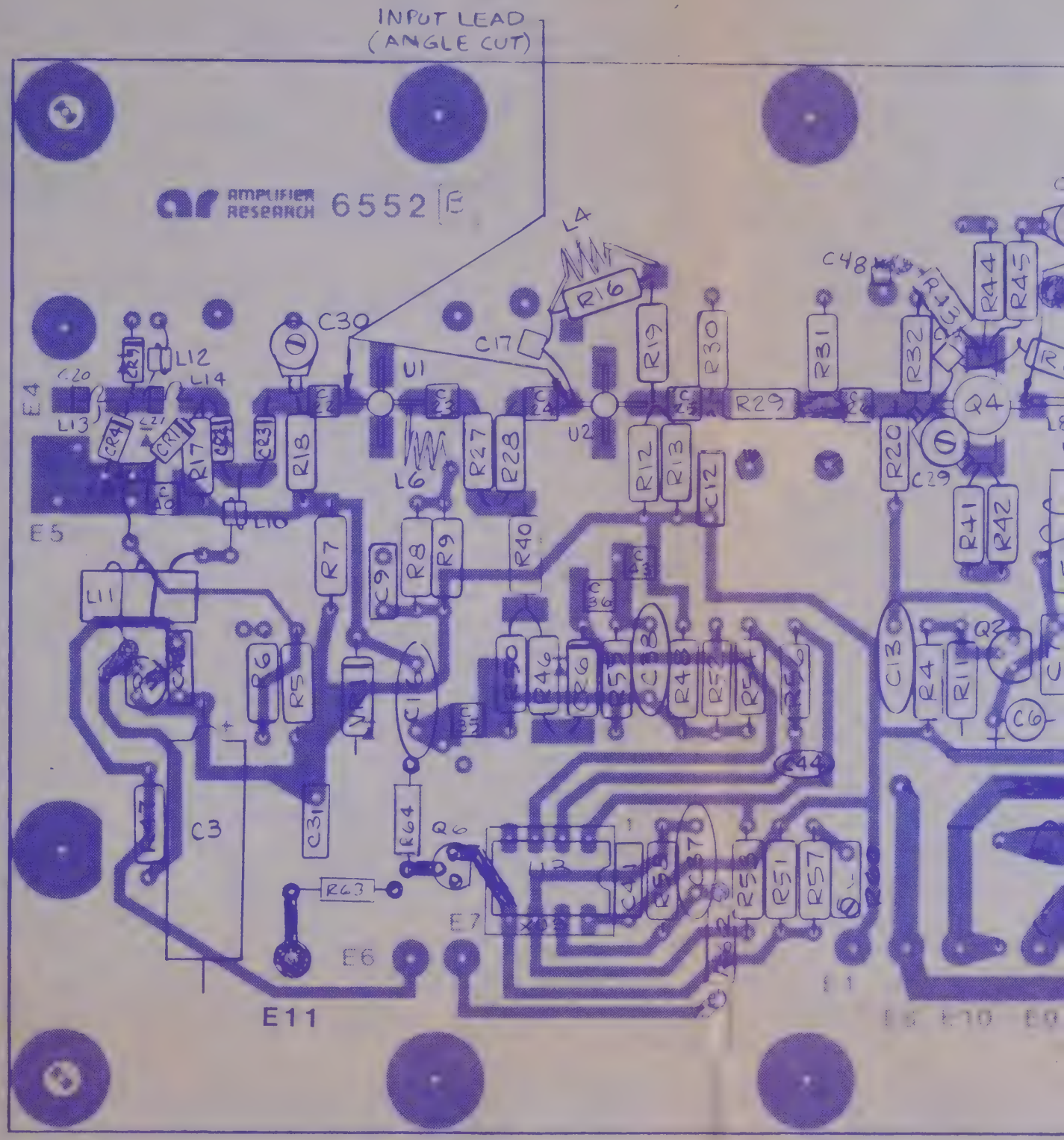
AMPLIFIER RESEARCH

SCHEMATIC DIAGRAM
DRIVER MODULE

DWG. NO. 1008092

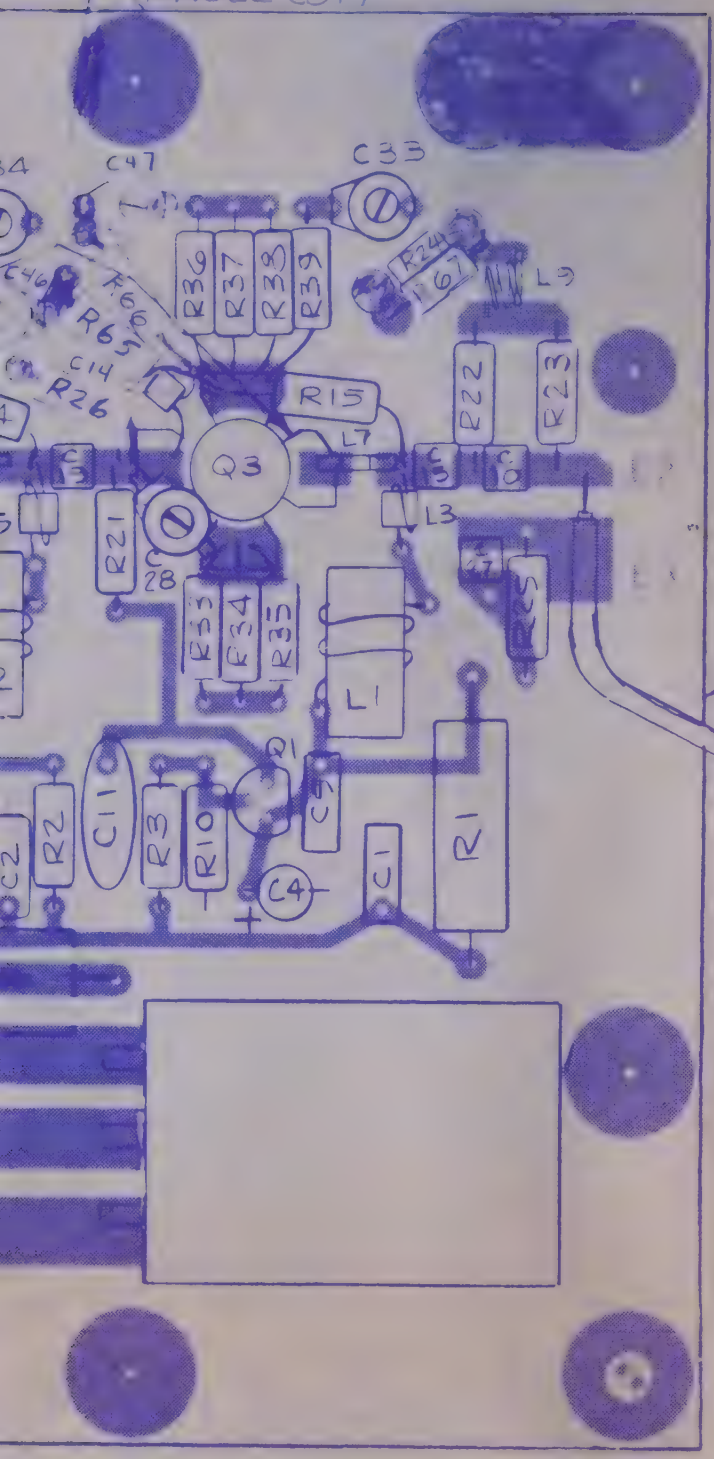
SCALE NONE | SHEET 1 OF 1 | REV. —

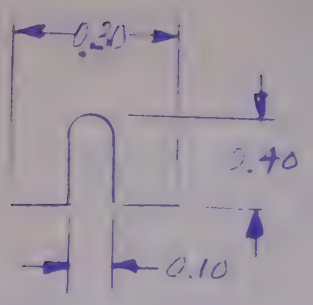

C20
OR
C21
L13 OR L14
2
C8
CR1
1
REF
1
REF


INPUT LEAD
(ANGLE CUT)
amplifier research 6552 E
L4
R16
C48
C30
C17
U1
U2
R19
R30
R31
R29
R32
R44
R45
Q4
C20
L13
L12
L14
CR4
CR1
R17
R18
R27
R28
L6
R12
R13
C12
R20
C29
R41
R42
E4
E5
L10
R7
C9
R8
R9
R40
L11
R6
R5
C1
C31
R64
Q6
C3
RC3
E6
E7
E11
C13
R4
R11
Q2
C6
C44
R58
R51
R57
E1

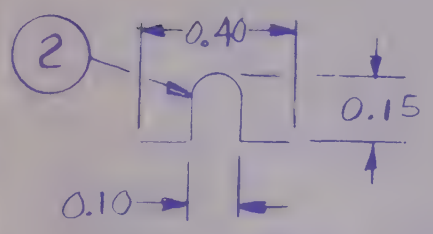
CN	DATE	REV
—	17 JUN 96	—

COLLECTOR LEAD
(ANGLE CUT)

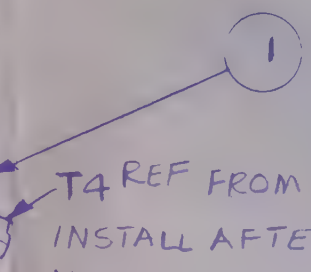


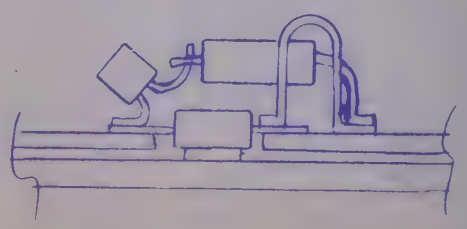


DETAIL FOR L7, L8



DETAIL FOR L13, L14





TYP INSTALLATION FOR
Q4, C18 & R14
Q3, C14 & R15

FOR BOM SEE 1008093-501

PART NO.	DESCRIPTION	MARK	FIN	MATL
BILL OF MATERIAL				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS
ALL THREADS ARE UNIFIED NATIONAL SERIES CLASS 2
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	± .02	± .005
ABOVE 6 TO 24	± .03	± .010
ABOVE 24	± .06	± .015

ANGULAR DIMENSIONS ½°

25W/1000A
USED ON MODEL

DRAWN M. BICKELMAN DATE 17 JUNE 96
CHKD DATE 17 JUN 96
MECH DATE 6/28/96
ELEC DATE 6-27-96

AMPLIFIER RESEARCH

PWB ASSEMBLY
DRIVER, W/INPUT LEVELING

1008093

SCALE 2/1 | SHEET 1 OF 1 | REV —

BILL NO: 1008093-501 REV: - U/M: EA DRAWING NO: ARC-C\1008093
PWB ASSY,DRIVER W/INPUT LEVELING

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0010	1008092	-	SCHEM DIAG,DRIVER MODULE	EA	REF	ARC-D\1008092	
0400	27045		CAPR,CER,0.033uF,100VDC	EA	10.000	TCC\EC05ZE0333M	C1 ,C2 C5 ,C7 C9 ,C12 C14 ,C17 C18 ,C31
0410	27068		CAPR,ELECT,100uF,50VDC,AXIAL	EA	1.000	PAN\ECEB1HU101	C3
0420	27047		CAPR,TANT,1UF,50V	EA	2.000	MAL\TDC105K050WSE	C4 ,C6
0430	27251		CAPR,CHIP,0.039uF,20%,50V	EA	13.000	ATC\200B393MP50	C8 ,C15 C19 ,C20 C21 ,C22 C23 ,C24 C25 ,C26 C35 ,C40 C43
0440	27032		CAPR,CHIP,24pF,20%,500V	EA	1.000	DIL\C174H240M4TXL	C10
0450	27196		CAPR,CER,0.1uF,20%,25V,CHAR Y5T	EA	3.000	MUE\CA-104M	C11 ,C13 C16
0470	27030		CAPR,CHIP,13pF,10%,500V	EA	1.000	DIL\C17AH130K500NT	C27
0480	27125		CAPR,VAR,CER,NPO,1.5-4PF,250V	EA	4.000	JDE\9371	C28 ,C29 C30 ,C46
0490	27224		CAPR,VAR,CER,NPO,5-25PF,250V	EA	3.000	JDE\9374	C33 ,C34 C47
0500	27039		CAPR,CHIP,CER,1000pF,10%,50V	EA	1.000	ATC\700B102MCA50X	C36
0510	27192		CAPR,CER,0.022uF,20%,25V,CHAR Y5T	EA	1.000	MUE\CA223M	C37
0520	27179		CAPR,CER,1000pF,1000V,10%,CHAR Z5F	EA	1.000	NIC\NCD102K1KVY5F	C38
0530	27236		CAPR,FXD,DIP SPACED CER,.1UF,50VDC	EA	1.000	AVX\MD015C104MAA	C41
0540	27183		CAPR,CER,220pF,10%,500/1000V	EA	2.000	CRL\DD221	C42 ,C44
0550	27031		CAPR,CHIP,15pF,20%,500V	EA	1.000	DIL\C17AH150MATXL	C48
0700	30037		DIODE,PIN	EA	3.000	H-P\5082-3080	CR1 ,CR2 CR3

BILL NO: 1008093-501 REV: - U/M: EA DRAWING NO: ARC-C\1008093
PWB ASSY,DRIVER W/INPUT LEVELING

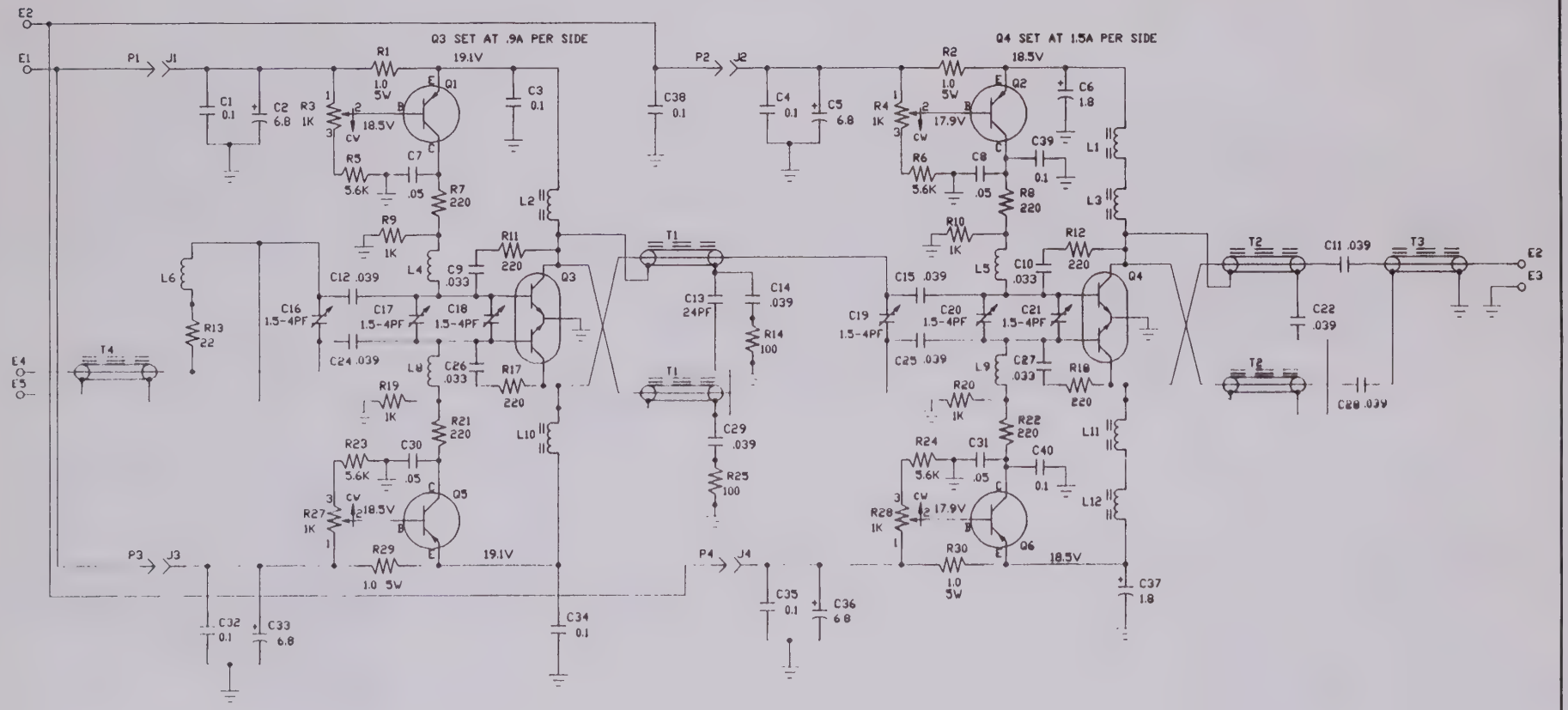
SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0710	1N4448		DIODE,SIGNAL,75V PIV	EA	2.000	FCH\1N4448	CR4 ,CR5
0720	30015		DIODE,1N82A,2V-3V,SELECTED SENSITIVITY	EA	1.000	MWA\IN82A	CR6
1800	49001	-	INDUCTOR,CORE,023-612X1-09-26-2-1	EA	1.000	ARC\1002803	L1
1810	49000	B	INDUCTOR,CORE,023-623X1-10-26-2-1	EA	2.000	ARC\1002497	L2 ,L11
1820	49269	A	INDUCTOR,CORE,023-401X1-04-34-2-1	EA	3.000	ARC\1002497	L3 ,L5 L10
1840	49267		INDUCTOR,AIR WOUND,012-02-03R0-A28-2	EA	1.000	ARC\1002503	L4
1850	49268		INDUCTOR,AIR,WOUND,012-02-06R0-A03-28-2	EA	1.000	ARC\1002503	L6
1855	66047		WIRE,BUSS,TINNED COPPER,22 AWG	IN	A/R	ALP\9022	L7 ,L8
1860	49270		INDUCTOR,AIR,WOUND,012-02-04R0-A03-28-2	EA	1.000	ARC\1002503	L9
1870	49277	-	INDUCTOR,CORE,023-401X1-06-34-2-1	EA	1.000	ARC\1002497	L12
2500	2N3906		XSTR,SWNG,PNP,40V,0.2A,1W	EA	2.000	ARE\2N3906	Q1 ,Q2
2510	1000034-162	AZ	XSTR,RF,HI PWR	EA	1.000	ARC\1000034	Q3
2520	1000034-174	BA	XSTR,RF,UHF,8-32 STUD MOUNT	EA	1.000	ARC-A\1000034	Q4
2530	2N3904		XSTR,SWNG,NPN,40V,0.2A,1W	EA	2.000		Q5 ,Q6
2700	55514-10R0J		RES,FXD,CARBON COMP,10,5%,1W	EA	1.000	A-B\GB1005	R1
2710	55512-22R0J		RES,FXD,CARBON COMP,22,5%,1/4W	EA	6.000	A-B\CB2205	R2 ,R22 R23 ,R41 R42 ,R44
2720	55612-3900J		RES,FXD,METAL FILM,390,5%,1/4-1/2W	EA	2.000	TRW\GP55-3900+/-5%	R3 ,R4
2730	55612-2002J		RES,FXD,METAL FILM,20K,5%,1/4-1/2W	EA	1.000	TRW\GP55-2002+/-5%	R5
2740	55612-1002J		RES,FXD,METAL FILM,10K,5%,1/4-1/2W	EA	1.000	TRW\GP55-1002+/-5%	R6
2750	55612-3301J		RES,FXD,METAL FILM,3.3K,5%,1/4-1/2W	EA	2.000	TRW\GP55-3301+/-5%	R7 ,R48
2760	55612-5600J		RES,FXD,METAL FILM,560,5%,1/4-1/2W	EA	3.000	TRW\GP55-5600+/-5%	R8 ,R9 R16
2770	55612-2201J		RES,FXD,METAL FILM,2.2K,5%,1/4-1/2W	EA	3.000	TRW\GP55-2201+/-5%	R10 ,R11 R57

BILL NO: 1008093-501 REV: - U/M: EA DRAWING NO: ARC-C\1008093
PWB ASSY,DRIVER W/INPUT LEVELING

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
2780	55612-4700J		RES,FXD,METAL FILM,470,5%,1/4-1/2W	EA	3.000	TRW\GP55-4700+/-5%	R12 ,R13 R19
2790	55612-2200J		RES,FXD,METAL FILM,220,5%,1/4-1/2W	EA	2.000	TRW\GP55-2200+/-5%	R14 ,R47
2800	55612-1800J		RES,FXD,METAL FILM,180,5%,1/4-1/2W	EA	1.000	TRW\GP55-1800+/-5%	R15
2810	55612-1001J		RES,FXD,METAL FILM,1K,5%,1/4-1/2W	EA	8.000	TRW\GP55-1001+/-5%	R17 ,R18 R21 ,R26 R32 ,R54 R55 ,R64
2820	55612-2701J		RES,FXD,METAL FILM,2.7K,5%,1/4-1/2W	EA	3.000	TRW\GP55-2701+/-5%	R20 ,R52 R53
2830	55512-15R0J		RES,FXD,CARBON COMP,15,5%,1/4W	EA	3.000	A-B\CB1505	R24 ,R43 R67
2840	55512-39R0J		RES,FXD,CARBON COMP,39,5%,1/4W	EA	2.000	A-B\CB3905	R25 ,R29
2860	55512-10R0J		RES,FXD,CARBON COMP,10,5%,1/4W	EA	2.000	A-B\CB1005	R27 ,R28
2880	55612-1500J		RES,FXD,METAL FILM,150,5%,1/4-1/2W	EA	2.000	TRW\GP55-1501+/-5%	R30 ,R31
2890	55512-36R0J		RES,FXD,CARBON COMP,36,5%,1/4W	EA	6.000	A-B\CN3605	R33 ,R34 R35 ,R36 R37 ,R38
2900	55512-2R70J		RES,FXD,CARBON COMP,2.7,5%,1/4W	EA	4.000	A-B\CB27G5	R39 ,R45 R65 ,R66
2905	55612-68R0J		RES,FXD,METAL FILM,68,5%,1/4-1/2W	EA	1.000	TRW\GP55-68R0+/-5%	R40
2915	55612-1000J		RES,FXD,METAL FILM,100,5%,1/4-1/2	EA	1.000	TRW\GP55-1000+/-5%	R46
2920	55612-56R0J		RES,FXD,METAL FILM,56,5%,1/4-1/2W	EA	1.000	TRW\GP55-56R0+/-5%	R50
2930	55612-6801J		RES,FXD,METAL FILM,6.8K,5%,1/4-1/2W	EA	1.000	TRW\GP55-6801+/-5%	R51
2940	55612-6802J		RES,FXD,METAL FILM,68K,5%,1/4-1/2W	EA	1.000	TRW\GP55-6802+/-5%	R56
2950	55612-1503J		RES,FXD,METAL FILM,150K,5%,1/4-1/2W	EA	1.000		R58
2970	55918		RES,VAR,CERMET,MULTITURN,TOP ADJ,5K,10%,1W	EA	1.000	MEP\8024EKW502	R60
2980	55512-33R0J		RES,FXD,CARBON COMP,33,5%,1/4W	EA	1.000	A-B\CB3305	R62
2990	55612-3901J		RES,FXD,METAL FILM,3.9K,5%,1/4-1/2W	EA	1.000	TRW\GP55-3901+/-5%	R63

BILL NO: 1008093-501 REV: - U/M: EA DRAWING NO: ARC-C\1008093
PWB ASSY,DRIVER W/INPUT LEVELING

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
3700	60056		INTEGRATED CKT,WBAND,HYBRID AMP.,8.5DB	EA	2.000	AVT\MSA-0435	U1 ,U2
3710	60039		INTEGRATED CKT,DUAL OP AMP	EA	1.000	MOT\MC1558U	U3
4000	30030		DIODE,ZENER,2.7V,5%,1W	EA	1.000	SCH\SZ2.7A	VR1
4500	73010		SOCKET,I.C.,8 PIN,DIP	EA	1.000	TII\C93-08-02	XU3
5000	1006552-101	C	PRINTED WIRING BD,DRIVER WITH INPUT LVL	EA	1.000	ARC-C\1006552	1
5010	66155		WIRE,MAGNET,SOLDERABLE,34AWG,PINK	EA	A/R		2



NOTES:

1.0 UNLESS OTHERWISE SPECIFIED:
RESISTOR VALUES ARE OHMS.
RESISTOR RATINGS ARE 1/4 WATT.
CAPACITOR VALUES ARE MICROFARADS.

2.0 THIS SCHEMATIC MAY REPRESENT MULTIPLE ASSEMBLIES. SEE APPROPRIATE PARTS LIST FOR FINAL COMPONENT VALUES.

REFERENCE LAST USED	DESIGNATIONS NOT USED
C40	L7
E5	R15, R16
J4	R26
L10	
P4	
Q6	
T4	
R30	

ECN	DATE	REV
-	20JUN96	-

ITEM	QTY. REQD.	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS
ALL THREADS ARE UNIFIED NATIONAL SERIES, CLASS 3
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	3 PLACE DECIMALS	2 PLACE DECIMALS
UP TO 6	±.002	±.005
ABOVE 6 TO 24	±.003	±.010
ABOVE 24	±.005	±.015

ANGULAR DIMENSIONS 1/2°

25W1000A
USED ON MODEL

DRAWN M. BICKELMAN DATE 20 MAY 96
CHKD DATE
MECH DATE
ELEC DATE

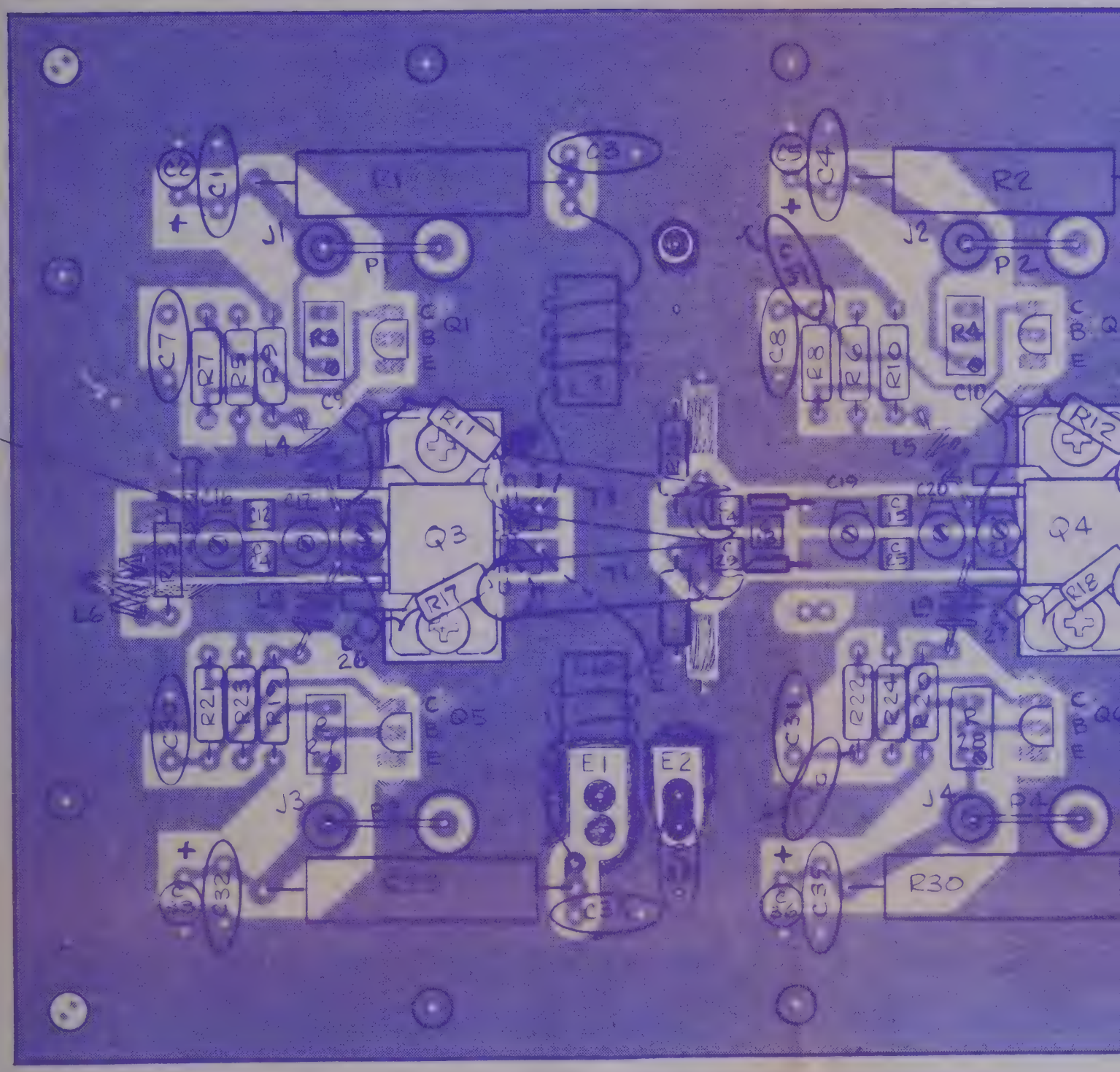
AMPLIFIER RESEARCH

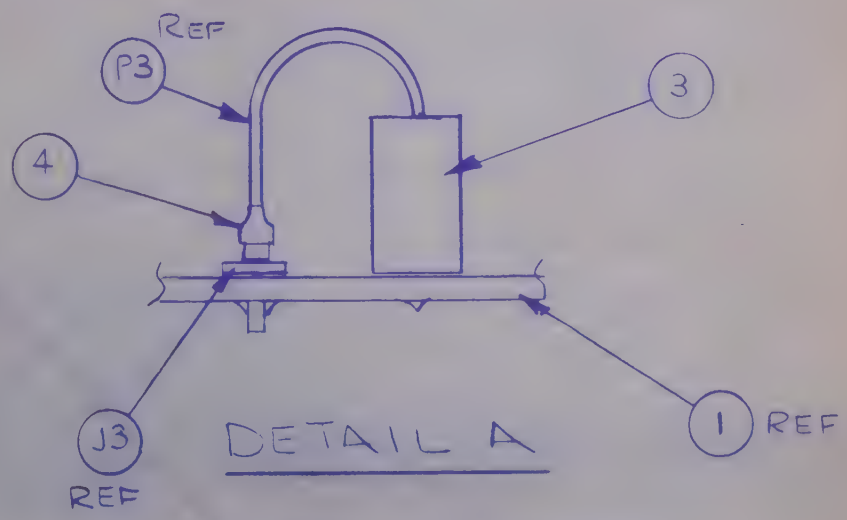
SCHEMATIC DIAGRAM
10 WATT DRIVER AMP

DWG. NO. 1008094

SCALE NONE | SHEET 1 OF 1 | REV —

T4
ATTACH AFTER
MOUNTING TO
HEATSINK

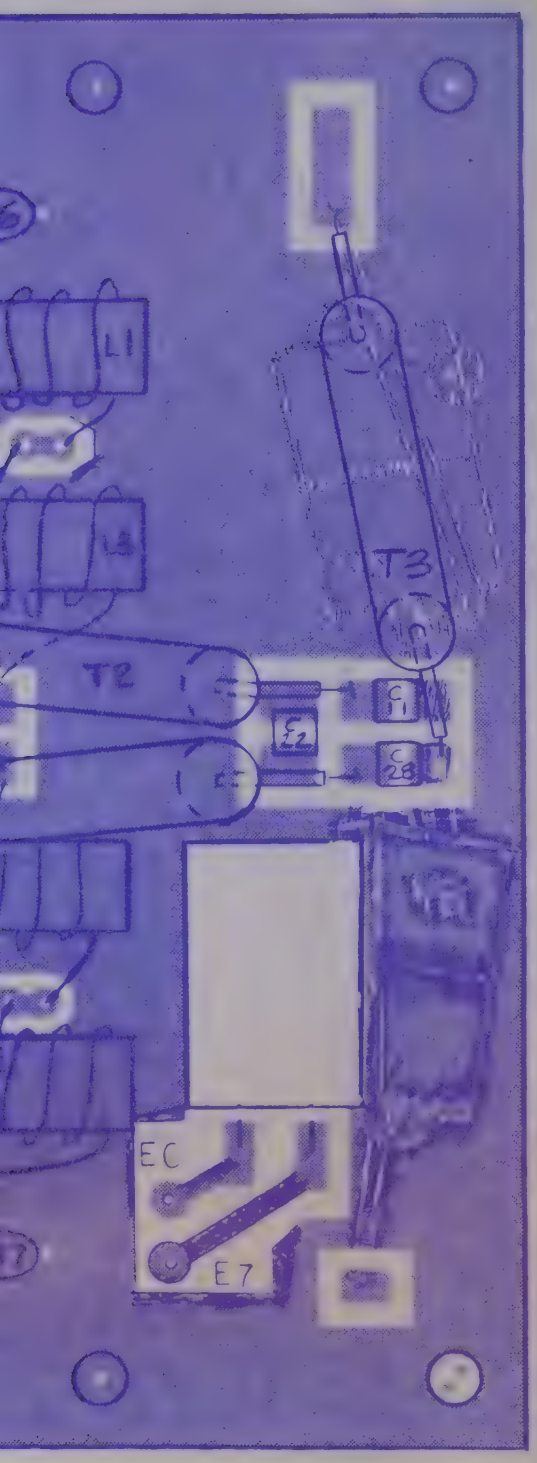


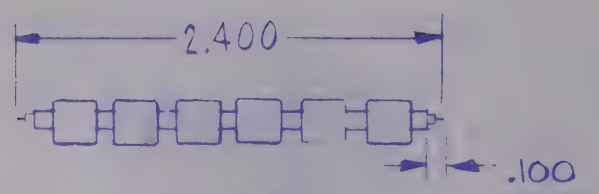


DETAIL A

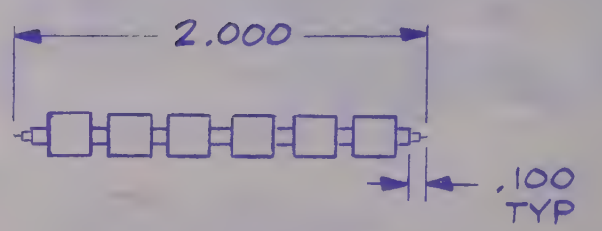
TYPICAL 4 PLACES

ECN	DATE	REV
–	17JUN96	–
8724	28JAN97	A
9060	15AUG97	B

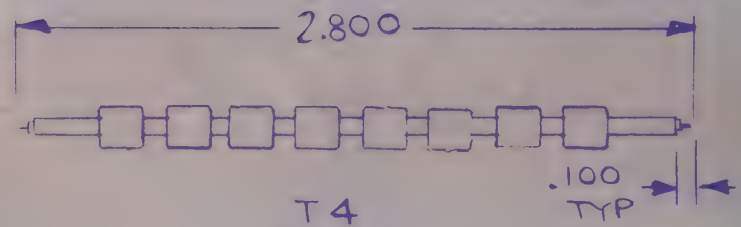




T1, T2



T3



T4

SEE BOM 1008095-501

PART NO	DESCRIPTION	MARK	FIN	MATL
BILL OF MATERIAL				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS
ALL THREADS ARE UNIFIED NATIONAL SERIES CLASS 2
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	± .02	± .005
ABOVE 6 TO 24	± .03	± .010
ABOVE 24	± .06	± .015

ANGULAR DIMENSIONS ½°

DRAWN M. BICKELMAN DATE 17JUNE96
CHKD DATE 17 JUN 96
MECH DATE 6/28/96
ELEC DATE

AMPLIFIER RESEARCH

PWB ASSY
10 WATT AMP

1008095

25W1000A
USED ON MODEL

SCALE 2/1 | SHEET 1 OF 1 | REV B

BILL NO: 1008095-501 REV: A U/M: EA DRAWING NO: ARC-C\1008095
PWB ASSY,10 WATT AMP

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0010	1008094	-	SCHEM DIAG,10 WATT DRIVER AMP	EA	REF	ARC-C\1008094	
0400	27196		CAPR,CER,0.1uF,20%,25V,CHAR Y5T	EA	9.000	MUE\CA-104M	C1 ,C3 C4 ,C32 C34 ,C35 C38 ,C39 C40
0410	27055		CAPR,TANT,6.8UF,50V	EA	4.000	MAL\TDC685K050NLF	C2 ,C5 C33 ,C36
0415	27048		CAPR,TANT,1.8UF,50V	EA	2.000	SPR\196D185X9050JA	C6 ,C37
0420	27195		CAPR,CER,0.05uF,20%,25V,CHAR Y5T	EA	4.000	MAL\LE473M	C7 ,C8 C30 ,C31
0430	27251		CAPR,CHIP,0.039uF,20%,50V	EA	9.000	ATC\200B393MP50	C11 ,C12 C14 ,C15 C22 ,C24 C25 ,C28 C29
0440	27032		CAPR,CHIP,24pF,20%,500V	EA	1.000	DIL\C174H240M4TXL	C13
0450	27125		CAPR,VAR,CER,NPO,1.5-4PF,250V	EA	4.000	JDE\9371	C16 ,C17 C19 ,C20
1500	41110		SOCKET,PIN,.040 PIN-THRU HOLE	EA	4.000	CON\09-9002-1-04	J1 ,J2 J3 ,J4
2200	20111	-	CABLE ASSY,#22 AWG,2.0	EA	4.000	ARC\1002991	P1 ,P2 P3 ,P4
2500	54506		XSTR,SWNG,PNP,40V,1A,1W	EA	4.000	MOT\MPSW51A	Q1 ,Q2 Q5 ,Q6
2700	55718-1R00J		RES,FXD,WW,1.0,5%,5W	EA	4.000	OHM\4530\95J1R0	R1 ,R2 R29 ,R30
2710	55917		RES,VAR,CERMET,MULTITURN,TOP ADJ,1K,10%,1W	EA	4.000	MEP\RJ24FW102	R3 ,R4 R27 ,R28
2715	55612-5601J		RES,FXD,METAL FILM,5.6K,5%,1/4-1/2W	EA	4.000	TRW\GP55-5601+/-5%	R5 ,R6 R23 ,R24
2720	55612-2200J		RES,FXD,METAL FILM,220,5%,1/4-1/2W	EA	4.000	TRW\GP55-2200+/-5%	R7 ,R8 R21 ,R22

BILL NO: 1008095-501 REV: A U/M: EA DRAWING NO: ARC-C\1008095
PWB ASSY,10 WATT AMP

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
2730	55612-1001J		RES,FXD,METAL FILM,1K,5%,1/4-1/2W	EA	4.000	TRW\GP55-1001+/-5%	R9 ,R10 R19 ,R20
2740	55512-22R0J		RES,FXD,CARBON COMP,22,5%,1/4W	EA	1.000	A-B\CB2205	R13
2750	55612-1000J		RES,FXD,METAL FILM,100,5%,1/4-1/2	EA	2.000	TRW\GP55-1000+/-5%	R14 ,R25
3210	66094		WIRE,MICRO COAX,50 OHM,COPPER JCKT,PTFE-FEP DIE.MT	IN	4.800	COM\UT47	T3 ,T4
3220	1000643-403	C	CORE,FERRITE,BEAD,1/2 CMD5005	EA	14.000	ARC\1000643	T3 ,T4
5000	1006555-101	B	PRINTED WIRING BD.,10 WATT FINAL AMP	EA	1.000	ARC-C\1006555	1
5010	69162		CABLE TIES,7/8 MAX BUNDLE DIA,4 L	EA	2.000	DEN\08432	2
5020	1000643-402	C	CORE,FERRITE,BEAD,CMD5005	EA	4.000	ARC\1000643	3
5030	66117		TUBING,SHRINK,BLK,.187 EXP,.093 REC	IN	A/R		4

BILL NO: 1008096-501 REV: A U/M: EA DRAWING NO:
COMPNT KIT,PWB ASSY,10 WATT AMP

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0400	27045		CAPR,CER,0.033uF,100VDC	EA	4.000	TCC\EC05ZE0333M	C9 ,C10 C26 ,C27
0410	27125		CAPR,VAR,CER,NPO,1.5-4PF,250V	EA	2.000	JDE\9371	C18 ,C21
1800	49009	A	INDUCTOR,CORE,023-608X1-20-26-2-1	EA	6.000	ARC\1002497	L1 ,L2 L3 ,L10 L11 ,L12
1810	49250		INDUCTOR,AIR WOUND,012-02-05R0-A03-26-2	EA	5.000	ARC\1002503	L4 ,L5 L6 ,L8 L9
2500	1000034-173A	-	XSTR,RF,HI PWR,2 EAR,PUSH-PULL	EA	2.000	ARC-A\1000034	Q3 ,Q4
2700	55612-2200J		RES,FXD,METAL FILM,220,5%,1/4-1/2W	EA	4.000	TRW\GP55-2200+/-5%	R11 ,R12 R17 ,R18
3200	1000643-403	C	CORE,FERRITE,BEAD,1/2 CMD5005	EA	24.000	ARC\1000643	T1 ,T2
3210	66104		WIRE,COAX,SEMI-RIGID,25 OHM	IN	10.000	COM\DE25038	T1 ,T2

XXXX	3 JUN 96	2
RF	8 JUN 96	-
8678	19 DEC 96	A
9014	21 JULY 97	B

P9 24V J10 C95 C1 6.8UF C2 .033 L1 C4 0.1
R1 0.33,2W R4 5.1K C14 24pf R5 5.1K C8 .033 U1B 60039 R9 121K
R6 10K Q1 TIP120 R2 220,1W C9 0.001 C15 0.001 R10 27 C20 0.1
CR1 1N4448 75V R11 2.7K CR2 1N4448 75V
J1 P1 L5 C10 0.001 C5 22 L2 C87 82pf C3 1000pf
P2 J2 L6 C12 0.05 R8 51 R3 100
L9 C18 0.039 C17 0.033 R7 220 P/O L32 R' R L8
C21 1.5-4pf C27 0.039 C22 1.5-4pf C23 1.5-4pf Q2
T1 T2/A T2/B C16 5100pf C25 0.039 C29 5100pf T3
C28 0.033 R13 220 L10 L13 P/O L32 G' G
P3 J3 L14 C36 0.05 R19 51 R44 100
L16 C88 82pf C6 1000pf
L18 C89 82pf C7 1000pf P/O L34 R' R L24
P6 J6 L22 C61 0.1 R25 51 R32 100 C52 0.05 L25
C58 0.039 C57 0.033 R29 220 C62 1.5-4pf C63 1.5-4pf C64 1.5-4pf Q5
T5/A T5/B C56 5100pf C66 0.039 C70 5100pf T8
C69 0.033 R33 220 L26 L30 P/O L34 G' G
P7 J7 L31 C79 0.05 R39 51 R45 100
L33 C90 82pf C85 22 C11 1000pf
T7/A T7/B R43 100 T4 T6 R12 50 C91 56pf C93 C92 J12
P11 C97 20V J11 L27 C71 0.033 C72 6.8UF C73 0.033 R34 0.33,2W
R36 5.1K C76 24pf U2B 60039 R37 5.1K R40 121K C82 0.001 C94 0.001
R38 10K Q6 TIP120 R35 220,1W C77 0.001 R41 27 C84 0.1
CR7 1N4448 75V R42 2.7K CR8 1N4448 75V
J8 P8 L28 C74 0.001 C75 0.001
C30 .033 R14 0.33,2W R17 5.1K C33 24pf U1A 60039 R16 5.1K R20 121K
R15 220,1W C34 0.001 R18 10K Q3 TIP120 J4 P4 L11 C31 0.001 C32 0.001
CR3 1N4448 75V R22 2.7K CR4 1N4448 75V R21 27 C39 0.1 C40 22
FAULT OUT P10 C96 J14 C43 .001 DS1 33008
CR9 C44 0.1 R23 0.33,2W C48 0.033 R27 5.1K
R26 5.1K C54 24pf U2A 60039 R30 121K C59 0.001 CR5 75V 1N4448 R32 2.7K
R24 220,1W C55 0.001 R28 10K Q4 TIP120 CR6 75V 1N4448 R31 27
J5 P5 L21 C49 0.001 C50 0.001 C45 22
T9/A T9/B T9/C J13

QTY. REQD.	ITEM	PART NO.	DESCRIPTION	MARK	FIN	MATL
		PARTS LIST				

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
DIMENSIONS ARE IN INCHES AND INCLUDE PLATING THICKNESS
THREADS ARE UNIFIED NATIONAL FORM, CLASS 2
REMOVE ALL BURRS AND SHARP EDGES

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	±.02	±.005
ABOVE 6 TO 24	±.03	±.010
ABOVE 24	±.06	±.015

ANGULAR DIMENSIONS ± 2°

25W1000A
USED ON MODEL

DRAWN J.H.REED DATE 17 MAY 96
CHKD J.H.REED DATE 18 JUNE 96
MECH J.MAGINN DATE 28 JUNE 96
ELEC J.BANKERT DATE 26 JUNE 96

AMPLIFIER RESEARCH

SCHEMATIC DIAG.
WC SERIES MODULE

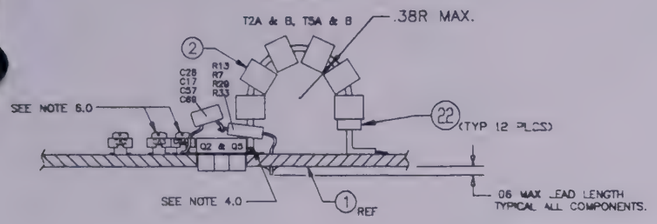
DWG. NO. 1008103

SCALE NONE SHEET 1 OF 1 REV. B

ECN	DATE	REV
XXXXX	3MAY96	1
RE-L	9JUN96	-
8579	18DEC96	A
8743	2MAR97	B

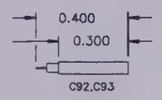
DETAIL "A"

SCALE: NONE

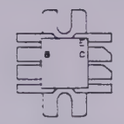


DETAIL "B"

SCALE: NONE

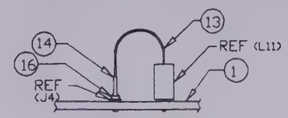


DETAIL "C"



TYP Q2 AND Q5 (COLLECTOR LEADS OF Q2 AND Q5 TO FACE T2 AND T5 RESPECTIVELY).

DETAIL "D"

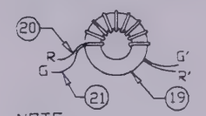


SCALE : NONE (8 PLACES)

J4 - L11	J3 - L14
J1 - L5	J2 - L6
J5 - L21	J6 - L22
J8 - L28	J7 - L31

DETAIL "E"

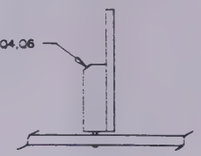
TYP L32,L34



NOTE:

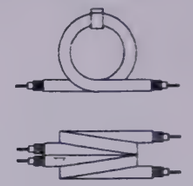
10 TURNS EACH OF ITEMS 20 AND 21.

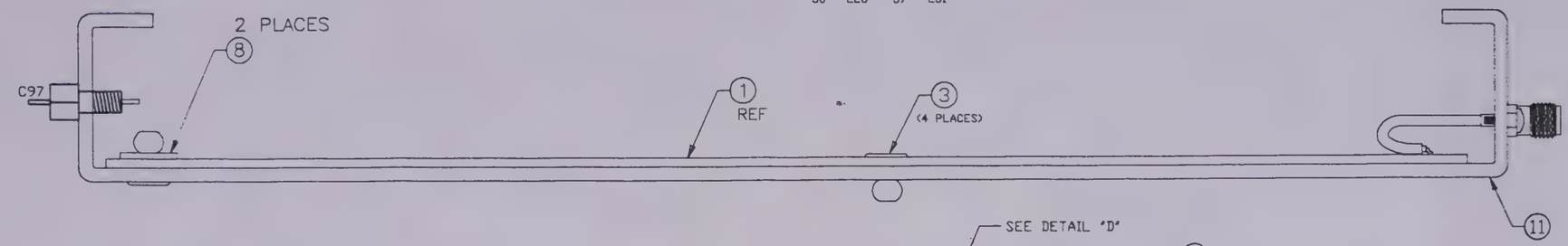
DETAIL "F"

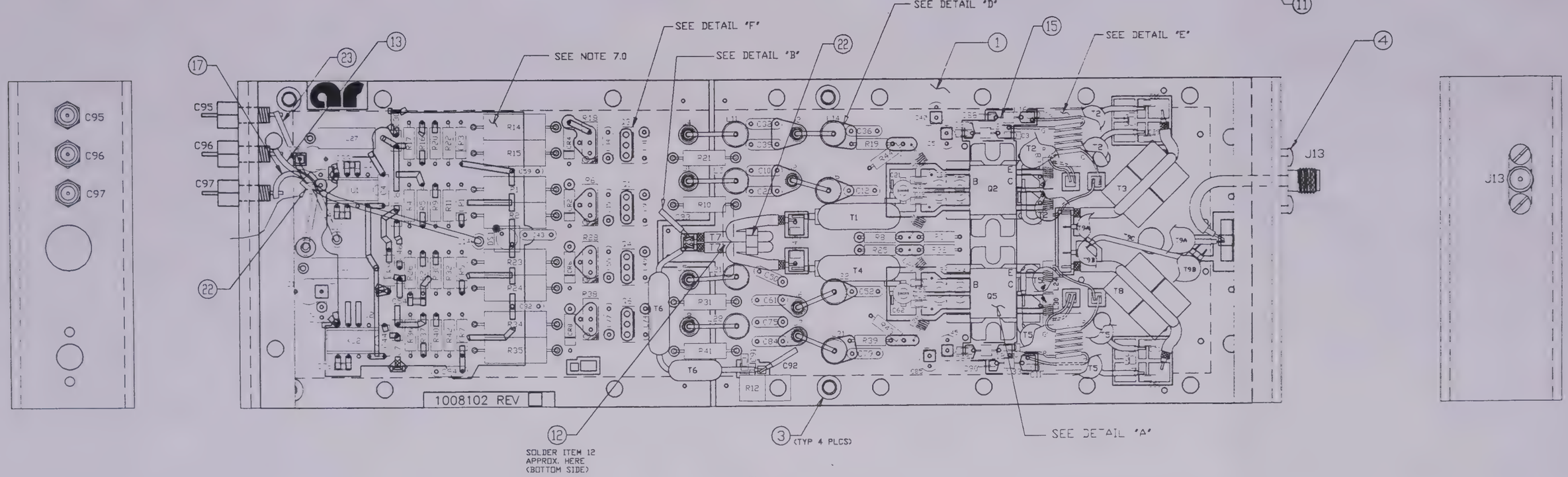


DETAIL "G"

T7 DETAIL







T9A
0.10 — 2.30 — 0.10

T9B
0.10 — 2.40 — 0.10

T9C
0.10 — 2.20 — 0.10

T9A AND T9B REQUIRE SEVEN FERRITE CORES (ITEM 2), TO BE INSTALLED ON THESE LENGTHS OF COAX.

NOTE: T9A, B, AND C LENGTHS ARE CRITICAL AND MUST BE INSTALLED AS SHOWN.

T3 & T8
4.20
0.10 — 0.10
0.15 — 0.15

INSTALL 2 FERRITE CORES (ITEM 18) ON EACH LENGTH OF COAX.

PLACE TY-RAP AROUND WIRES TO HOLD FERRITE BEADS OFF BOARD

T2,T5
0.10 — 2.30 — 0.10

2 PCS T2, 2 PCS T5, INSTALL SEVEN FERRITE CORES (ITEM 2), ON EACH LENGTH OF COAX.

T1 & T4
0.10 — 2.30 — 0.10

INSTALL SIX FERRITE CORES (ITEM 2) ON EACH LENGTH OF COAX.

T6
0.10 — 2.30 — 0.10

INSTALL FIVE FERRITE CORES (ITEM 2) ON EACH LENGTH OF COAX.

T7
0.15 — 2.10 — 0.15
0.10 — 0.10

NOTES:

1.0 COAX USED TO FORM T1,T2,T4,T5,T6, AND T9 (PN'S 66104, 66094, AND 66202), ARE SIMILAR IN APPEARANCE – USE CAUTION – DO NOT SWAP.

2.0 EXTRA CARE MUST BE USED IN THE PREPARATION OF 'SOLDER CONTACT AREA' OF T1 – T6,T8, AND T9 TO ASSURE MAXIMUM SOLDERABILITY.

3.0 T3,T8,T9A, AND T9B MUST BE INSTALLED AS SHOWN.

4.0 THE LEADS OF T2 MUST BE SOLDERED AS CLOSE AS POSSIBLE TO THE BODY OF Q2. THE SAME IS TRUE FOR T5 AND Q5.

5.0 Q2,Q5 AND ASSOCIATED COMPONENTS CAN ONLY BE INSTALLED WHEN PWB ASSY IS MOUNTED ON ASSEMBLY FIXTURE.

6.0 EDGE OF C23 AND C64 SHOULD JUST TOUCH TRANSISTOR BODY (Q2,Q5) C22 AND C63 SHOULD JUST CONTACT C23 AND C64.

7.0 R1,R2,R14,R15,R23,R24,R34, AND R35, CAN BE MOUNTED FLUSH ON PWB (ITEM 1).

8.0 R12 IS TO BE SOLDERED FLUSH ON PWB (ITEM 1).

9.0 INSTALL C16,C18,C25,C27,C29,C54,C56,C58,C66,C68, AND C70, ON SIDE.

10.0 AFTER FORMING T1,T4,T2,T5,T9A, AND T9B, PLACE CABLE TIES ON TO HOLD FERRITE CORES OFF BOARD.

FOR BOM SEE 1008101-501

ITEM	QTY. REQD.	PART NO.	DESCRIPTION	MARK	FIN	MATL
			PARTS LIST			

UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING DIMENSIONS ARE IN INCHES AND METRIC EQUIVALENTS TOLERANCES ON THREADS ARE MFRS MATERIAL FINISH CLASS REMOVE ALL BURRS AND SHARP EDGES

USED ON MODEL

DRAWN J.MCREED DATE 7 MAY 96
CHKD J.MCREED DATE 9 JUNE 96
MECH J.MADINN DATE 28 JUNE 96
ELEC J.BANKERT DATE 28 JUNE 96

AMPLIFIER RESEARCH

ASSEMBLY DRAWING WC SERIES MODULE

DWG. NO. 1008101

SCALE NONE SHEET . OF . REV B

BILL NO: 1008101-501 REV: C U/M: EA DRAWING NO: ARC-D\1008101
PWB ASSY,WC SERIES MODULE

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0010	1008103	B	SCHEM DIAG,WC SERIES MODULE	EA	REF	ARC-D\1008103	
0020	1008101	C	ASSY DWG,PWB ASSY,WC SERIES MODULE	EA	REF	ARC-D\1008101	
0400	27055		CAPR,TANT,6.8UF,50V	EA	6.000	MAL\TDC685K050NLF	C1 ,C5 C40 ,C45 C72 ,C85
0410	27045		CAPR,CER,0.033uF,100VDC	EA	10.000	TCC\EC05ZE0333M	C2 ,C8 C17 ,C28 C30 ,C48 C57 ,C69 C71 ,C73
0415	27039		CAPR,CHIP,CER,1000pF,10%,50V	EA	4.000	ATC\700B102MCA50X	C3 ,C6 C7 ,C11
0420	27236		CAPR,FXD,DIP SPACED CER,.1UF,50VDC	EA	2.000	AVX\MD015C104MAA	C4 ,C44
0430	27179		CAPR,CER,1000pF,1000V,10%,CHAR Z5F	EA	16.000	NIC\NCD102K1KVY5F	C9 ,C10 C15 ,C31 C32 ,C34 C43 ,C49 C50 ,C55 C59 ,C74 C75 ,C77 C82 ,C94
0440	27195		CAPR,CER,0.05uF,20%,25V,CHAR Y5T	EA	4.000	MAL\LE473M	C12 ,C52 C36 ,C79
0450	27032		CAPR,CHIP,24pF,20%,500V	EA	4.000	DIL\C174H240M4TXL	C14 ,C33 C54 ,C76
0460	27251		CAPR,CHIP,0.039uF,20%,50V	EA	6.000	ATC\200B393MP50	C18 ,C25 C27 ,C58 C66 ,C68
0470	27196		CAPR,CER,0.1uF,20%,25V,CHAR Y5T	EA	4.000	MUE\CA-104M	C20 ,C61 C39 ,C84
0480	27125		CAPR,VAR,CER,NPO,1.5-4PF,250V	EA	6.000	JDE\9371	C21 ,C22 C23 ,C62 C63 ,C64
0490	27037		CAPR,CHIP,82pF,10%,500V	EA	4.000	DIL\C17AH820K4TXL	C87 ,C88 C89 ,C90

BILL NO: 1008101-501 REV: C U/M: EA DRAWING NO: ARC-D\1008101
PWB ASSY,WC SERIES MODULE

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
0500	27254		CAPR,CHIP,56pF,20%,500V	EA	1.000	DIL\C17AH560M4TXL	C91
0510	27100		CAPR,FEED-THRU,FILT,.004UF,500V	EA	3.000	TXS\FR3-50	C95 .C96 C97
0520	27270		CAPR,CHIP,5100pF,20%,50V	EA	4.000	ATC\700B512MW	C16 .C29 C56 .C70
0700	1N4448		DIODE,SIGNAL,75V PIV	EA	9.000	FCH\1N4448	CR1 .CR2 CR3 .CR4 CR5 .CR6 CR7 .CR8 CR9
1000	33008	-	LED,RED,CKT BD INDICATOR,W/O RES	EA	1.000	DIA\550-0404	DS1
1500	41110		SOCKET,PIN,.040 PIN-THRU HOLE	EA	11.000	CON\09-9002-1-04	J1 .J2 J3 .J4 J5 .J6 J7 .J8 J10 .J11 J14
1520	1004451-504	C	CABLE ASSY,COAX,SEMI-RIGID,ALUM,SMA BLKHD	EA	1.000	ARC-B\1004451	J13
1800	49168	B	INDUCTOR,CORE,023-402X1-01-22-5-1	EA	2.000	ARC\1002497	L1 .L27
1810	1000643-401	C	CORE,FERRITE,BEAD	EA	4.000	ARC\1000643	L2 .L16 L18 .L33
1820	1000643-402	C	CORE,FERRITE,BEAD,CMD5005	EA	8.000	ARC\1000643	L6 .L14 L22 .L31 L5 .L11 L21 .L28
1830	49295	-	INDUCTOR,CORE,023-602X1,05-28-2-2	EA	4.000	ARC-A\1002497	L8 .L13 L24 .L30
1840	49250		INDUCTOR,AIR WOUND,012-02-05R0-A03-26-2	EA	4.000	ARC\1002503	L9 .L10 L25 .L26
2500	54539		XSTR,DARLINGTON,8A,60VDC	EA	4.000	MOT\TIP120	Q1 .Q3 Q4 .Q6
2510	1000034-173	AZ	XSTR,RF,HI PWR,2 EAR,PUSH-PULL	EA	2.000	ARC\1000034	Q2 .Q5
2700	55715-R470J		RES,FXD,WW,0.47,5%,2W,TYPE SPH	EA	4.000		R1 .R14 R23 .R34

BILL NO: 1008101-501 REV: C U/M: EA DRAWING NO: ARC-D\1008101
PWB ASSY,WC SERIES MODULE

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
2710	55514-2200J		RES,FXD,CARBON COMP,220,5%,1W	EA	4.000	A-B\GB2215	R2 ,R15 R24 ,R35
2720	55612-1000J		RES,FXD,METAL FILM,100,5%,1/4-1/2	EA	9.000	TRW\GP55-1000+/-5%	R3 ,R8 R19 ,R25 R32 ,R39 R44 ,R45 R43
2730	55612-5101J		RES,FXD,METAL FILM,5.1K,5%,1/4-/12W	EA	8.000	TRW/GP55-5101+/-5%	R4 ,R5 R16 ,R17 R26 ,R27 R36 ,R37
2740	55919		RES,VAR,CERMET,MULTITURN,TOP ADJ,10K,10%,1/2W	EA	4.000	BOR\3299Y-1-103	R6 ,R18 R28 ,R38
2750	55612-2200J		RES,FXD,METAL FILM,220,5%,1/4-1/2W	EA	4.000	TRW\GP55-2200+/-5%	R7 ,R13 R29 ,R33
2760	55612-4702J		RES,FXD,METAL FILM,47K,5%,1/4-1/2W	EA	4.000	TRW\GP55-4702+/-5%	R9 ,R20 R30 ,R40
2770	55513-27R0J		RES,FXD,CARBON COMP,27,5%,1/2W	EA	4.000	A-B\EB2705	R10 ,R21 R31 ,R41
2780	55612-2701J		RES,FXD,METAL FILM,2.7K,5%,1/4-1/2W	EA	4.000	TRW\GP55-2701+/-5%	R11 ,R22 R32 ,R42
2790	56072		RES,FXD,PRECISION,FLANGE,MOUNT,50	EA	1.000	RFP\RFP-20-50TP	R12
3200	66094		WIRE,MICRO COAX,50 OHM,COPPER JCKT,PTFE-FEP DIE.MT	IN A/R		COM\UT47	T1 ,T4 T6 ,C92 C93
3210	66104		WIRE,COAX,SEMI-RIGID,25 OHM	IN	10.000	COM\DE25038	T2 ,T5
3220	66086		WIRE,COAX,50 OHM,1.2KV RMS,PTFE JCKT,PTFE DIE.MATL	IN	8.400	MFG\RG-188A/U	T3 ,T8
3240	66090		WIRE,COAX,75 OHM,1.2KV RMS,FEP-IX JACKET	IN	4.800		T7
3250	66202		WIRE,COAX,SEMI-RIGID,UT 47-35,35 OHM	IN	7.500		T9
3700	60039		INTEGRATED CKT,DUAL OP AMP	EA	2.000	MOT\MC1558U	U1 ,U2
4500	73010		SOCKET,I.C.,8 PIN,DIP	EA	2.000	TII\C93-08-02	XU1 ,XU2
5000	1008102-101	C	PWB,WC SERIES MODULE	EA	1.000	ARC-C\1008102	1

BILL NO: 1008101-501 REV: C U/M: EA DRAWING NO: ARC-D\1008101
PWB ASSY,WC SERIES MODULE

SEQ	PART NUMBER	REV	D E S C R I P T I O N	U/M	QUANTITY-PER	DRAWING NUMBER	REF-DSGN
5010	1000643-403	C	CORE,FERRITE,BEAD,1/2 CMD5005	EA	59.000	ARC\1000643	2
5020	69120		RIVET,GRIP-TITE,A,1/8"DIA,1/8-1/4"MAT'L THK	EA	4.000	GRA\5X520	3
5030	11008		SCREW,MACH FIL HD,SLOTTED,S/S,3-56 X .25	EA	2.000	PCI\AN501-D3-4	4
5060	66047		WIRE,BUSS,TINNED COPPER,22 AWG	IN A/R		ALP\9022	7
5070	12054		WASH,POP-RIVET,BACKING,ALUM	EA	2.000	MCS\90183A213	8
5090	66058		WIRE,MAGNET,SOLDERABLE,22 AWG,RED	IN A/R		WEI\22 AWG RED	10
5100	1005303-101	D	CARRIER,PWB	EA	1.000	ARC-D\1005303	11
5110	69331		CONTACT,SPRING FINGER	EA	1.000	I-S\97-115-01	12
5120	66027		WIRE,TFE,22 AWG,STRANDED,TYPE E,RED	IN	2.200		13
5130	66116		TUBING,SHRINK,BLK,.093 EXP,.046 REC	IN	1.000	REM\F-P301	14
5140	66035		WIRE,TFE,22 AWG,SOLID WHT	IN	4.000	WEI\2822	15
5150	41117		PIN,CONN	EA	11.000	CAM\460-3308-01-03	16
5160	66020		WIRE,TFE,18 AWG,STRANDED,TYPE E,BLU	IN	2.000		17
5170	1000643-633	H	CORE,FERRITE,TOROID	EA	4.000	ARC\1000643	18
5180	1000643-605	C	CORE,FERRITE,TOROID,Q1	EA	2.000	ARC\1000643	19
5190	66054		WIRE,MAGNET,SOLDERABLE,28 AWG,RED	IN A/R			20
5200	66052		WIRE,MAGNET,SOLDERABLE,28 AWG,GRN	IN A/R			21
5210	69319		CABLE TIES, 0.6 MAX BUNDLE DIA,2.8 L	EA	16.000	PNT\PLT.65MC	22
5220	66034		WIRE,TFE,22 AWG,STRANDED,TYPE E,WHT	IN	4.000		23

SECTION VI

RECOMMENDED SPARE PARTS

6.1 LEVEL OF MAINTENANCE

Three separate lists of parts are recommended for maintenance of the related amplifier. Each list will contain parts that will be required for repairs to be performed at a particular level of technical expertise and equipment needed to perform this level of maintenance. The three levels of maintenance are as follows.

Level 1—Technician Level

Performed at equipment location with connectorized items. Limited to replacement of printed wiring boards (PWBs), amplifier assemblies, fuses, and so forth. Requires qualified technical personnel. Suggested when down time must be minimized.

Level 2—Field Service/Shop Level

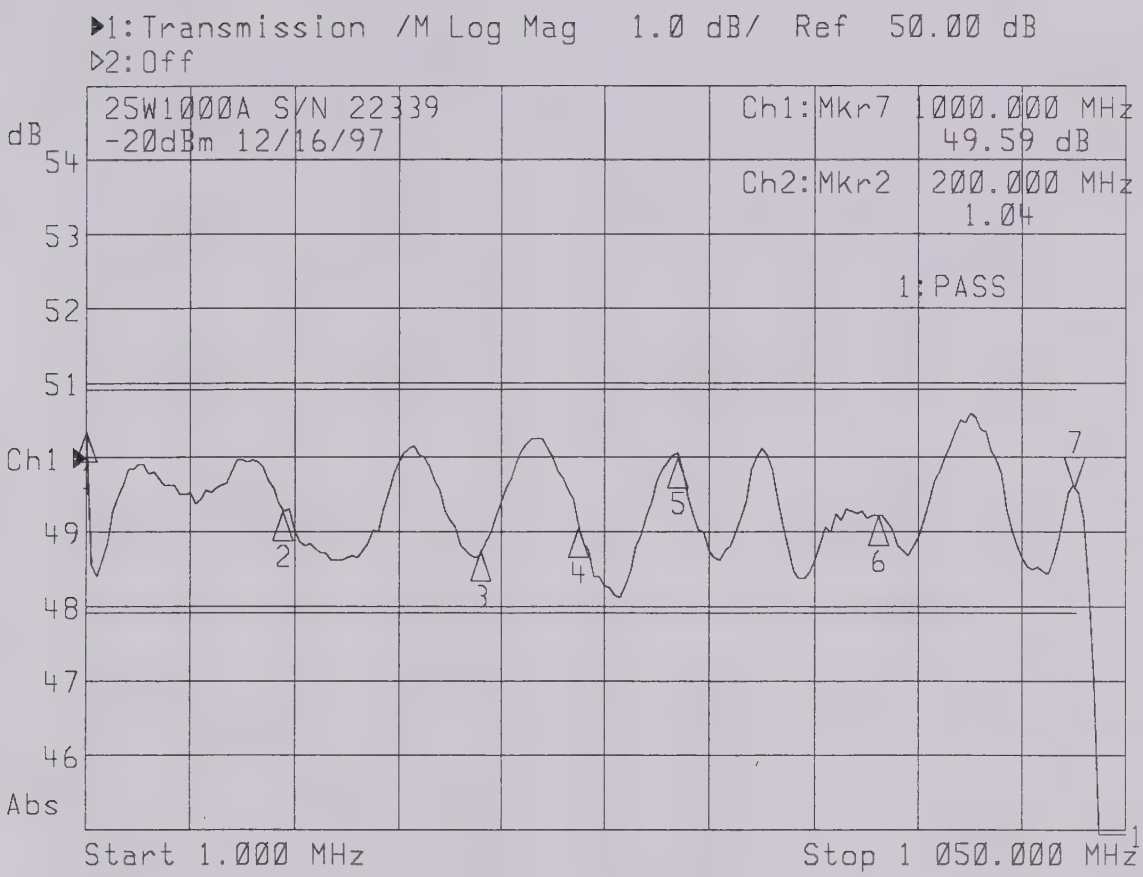
Parts replacement requiring minimum adjustment or alignment. Includes PWB repair, and replacement of controls, power supply components, fans, and individual Radio Frequency (RF) components that would not adversely affect the amplifier's alignment.

Level 3—Factory-Authorized Level

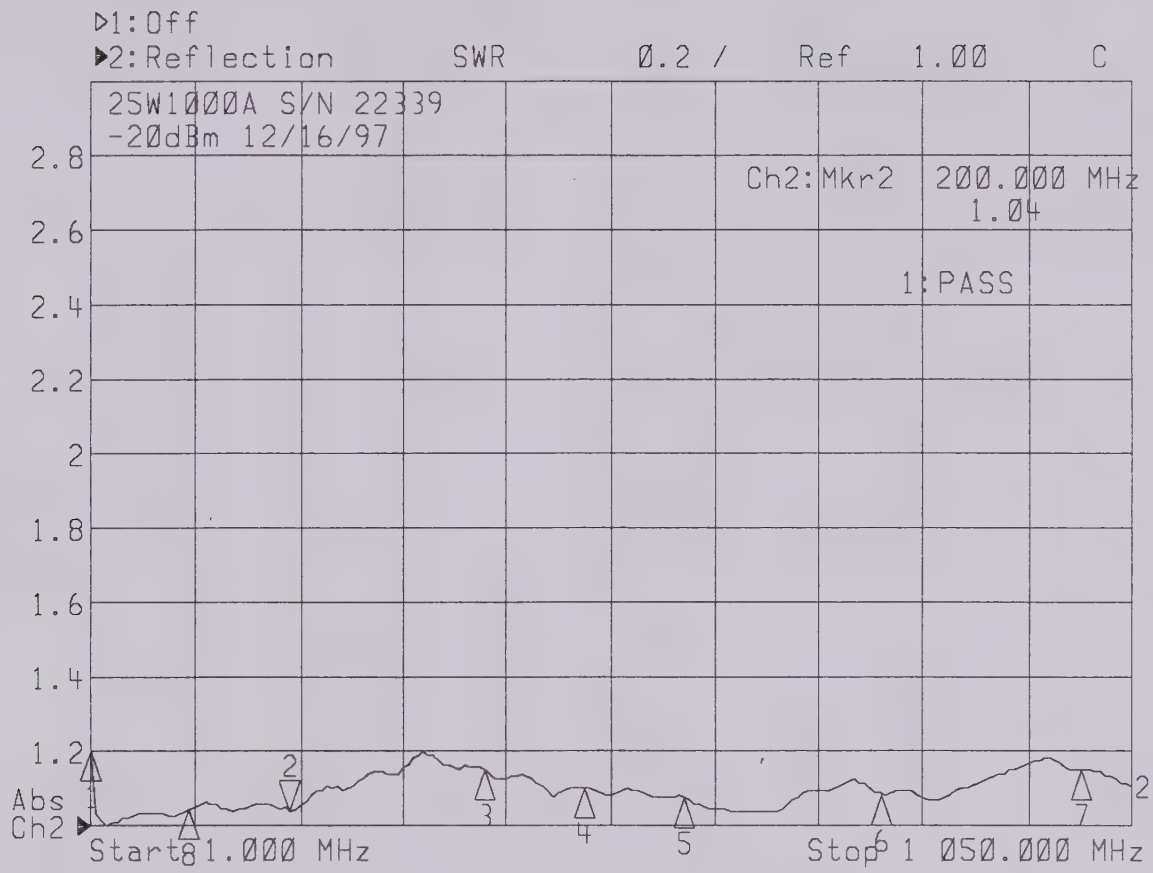
Repairs that require amplifier alignment or major adjustments. To be performed by a qualified technical staff in a properly instrumented laboratory.

BILL NO: 1008100-501 REV: - U/M: EA DRAWING NO: ARC-D\1008100
MODEL 25W1000A,1-1000MHz,25 WATTS

SEQ	PART NUMBER AND DESCRIPTION	REV	U/M	SCRAP PCTG	MRP	MANF CLASS	QUANTITY-PER	DRAWING NUMBER	REFERENCE DESIGNATORS
5000	1001576-311 CABINET,INST CASE,PERF BOT PNL,5.25 H,10.8 D	M	EA		P	SM01	1.000	ARC-B\1001576	1
5010	1008090-501 AMPL ASSY	-	EA		M	SA01	1.000	ARC-D\1008090	2
5020	1007220-101 BRKT,MTG	A	EA		P	SM01	2.000	ARC-B\1007220	3
5030	11019 SCREW,MACH,PAN HD,CROSS-REC,S/ZN,6-32X.50,TYPE SW		EA		F	HA01	4.000		4
5040	94027 SCREW,PNL,DECORATIVE,WITH NYLON WASH		EA		F	SM01	8.000	OPM\HW-1	6
5050	14043 FASTENER,"U" TYPE,10B SCREW,PNL RANGE .125-.160		EA		F	HA01	8.000	ECO\C14810-102	7
5060	1007226-101-F1-M111 PL,MODEL NO,25W1000A	AG	EA		P	SM02	1.000	ARC-A\1007226	8
5070	66147 PWR CORD,3 COND,18AWG,UNIV DTCH		EA		P	WI01	1.000	PAE\C3120-008-BL	
5080	1008099-501 MANUAL,MODEL 25W1000A		EA		M	DOC1	4.000		
5090	1007296-501 SPARE PARTS KIT	A	EA		M	SA01	1.000		



1:Mkr (MHz)	dB	2:Mkr (MHz)
1: 1.00	50.33	
2: 200.00	49.29	
3: 400.00	48.74	
4: 500.00	49.06	
5: 600.00	50.00	
6: 800.00	49.21	
7> 1000.00	49.59	



1:Mkr (MHz) dB	2:Mkr (MHz)	
	1:	1.00 1.20
	2>	200.00 1.04
	3:	400.00 1.15
	4:	500.00 1.10
	5:	600.00 1.07
	6:	800.00 1.08
	7:	1000.00 1.15
	8:	100.00 1.04

AMPLIFIER RESEARCH

MODEL NO. 25W1000A
SERIAL NO. 22339
TESTED BY [illegible]
DATE 12/16/97

TEST DATA SHEET

FREQ. (MHz)	POWER OUTPUT @ 1dB COMPRESSION (WATTS)	POWER OUTPUT SATURATED (WATTS @ 0dBm INPUT
1	22.6	42.7
5	22.8	39.9
10	22.8	35.8
25	23.7	37.1
50	22.7	36.0
100	24.6	34.8
200	23.9	35.7
300	28.7	40.7
400	32.2	41.5
500	25.3	33.7
600	25.3	36.7
700	25.5	37.1
800	30.5	40.0
900	25.1	39.4
1000	31.1	40.8

GAIN 49 dB @ 0.77 WATTS OUTPUT @ 500 MHz

LINE VOLTAGE PERFORMANCE ✓ (√)

FLATNESS

SMALL SIGNAL ± 1.5

OPEN TEST ✓ (√)

SHORT TEST ✓ (√)

STABILITY ✓ (√)

DISTORTION AT 20 WATTS -20dBc

INPUT VSWR 1.2:1.0

REMOTE CONTROL ✓ (√)

INPUT ATTEN. RANGE ✓ (√)

TEST EQUIPMENT	S/N
SIGNAL GENERATOR	TEC-SG 1030
NETWORK ANALYZER	TEC-NA 1458
POWER METER	TEC-PM 1563
SPECTRUM ANALYZER	TEC-SA 1063
OSCILLOSCOPE	TEC-OS —
30 dB FIXED ATTEN.	TEC-AT 1464
20 dB FIXED ATTEN.	TEC-AT 1476

TEST EQUIPMENT CALIBRATED TO NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY. (NIST)

AMPLIFIER RESEARCH
In compliance to IEC 1010-1
Safety requirements of electrical equipment for laboratory use
Annex K

ROUTINE TESTS

Model : 25W1000A

Serial No. : 22339

Date : 12/16/97

Inspected By : BJB

s: For equipment with working voltage up to 300 V

Protective earth resistance	Limit	
Apply 25 amps between protective terminal and **ACCESSIBLE** parts. Record resistance.	≤ 0.1 ohms	70m ohms

Mains circuit insulation	(Circle one)	(√)
Apply voltage from the mains input to chassis for a period of time greater than two (2) seconds. No arcing or breakdown should occur.	1350 VAC 1900 VDC	✓

Floating input terminals	Record Voltage	(√)
Apply 1.5 times working voltage to floating input terminals, where applicable. No arcing or breakdown should occur.	NA	—

WARRANTIES: LIMITATION OF LIABILITY

Seller warrants (i) that seller has title to the goods sold and (ii) that Amplifiers, Antennas, Directional Couplers and Field Monitoring Equipment will be free from defects in material and workmanship for a period of two (2) years from date of shipment shown on Amplifier Research invoice; other products and vacuum tubes will be free from defects in material and workmanship for a period of one (1) year. Seller's sole responsibility in fulfilling these warranties shall be to repair or replace any goods which do not conform to the foregoing warranties or, at seller's option, to give buyer credit for defective goods. The warranty is valid only when used in the country specified at time of order. Warranty service must be obtained from the repair facility designated at that time. If warranty service is not available in the country where the equipment is to be used then it must be returned to Amplifier Research. Warranty service will be provided only for defective goods which are returned within the warranty period, freight costs prepaid to Amplifier Research or its designated repair facility.

There are no other warranties, express or implied, including any warranty of merchantability or fitness. Seller shall not be responsible for any incidental or consequential damages arising from any breach of warranty.

No person other than an officer of Amplifier Research Corporation, has any authority to bind seller to any affirmation, representation or warranty except as specifically included in the preceding terms and conditions.

www.manualsplus.com
1030398